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WILDLIFE REVIEW

NUMBER 121 MARCH 1966

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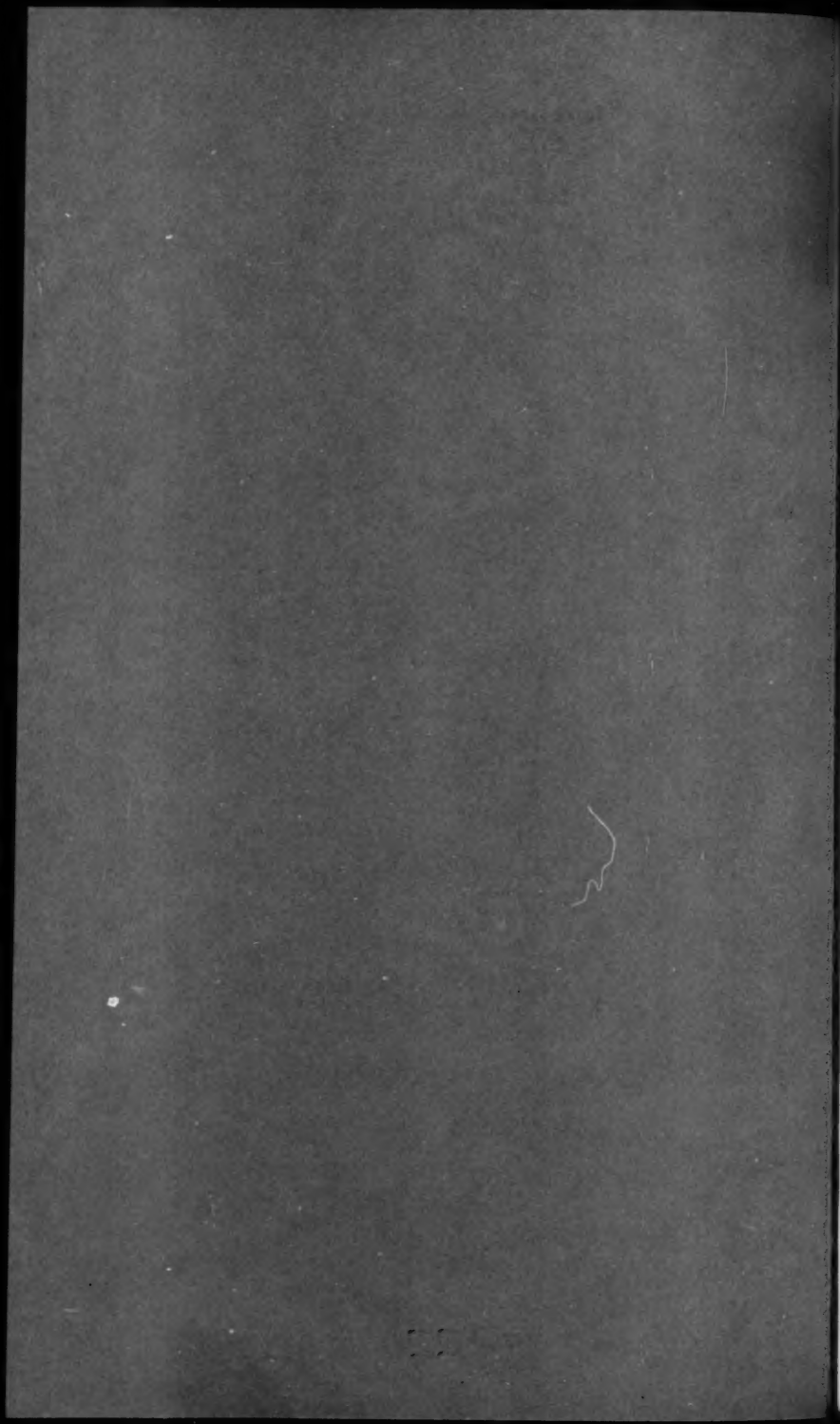

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WILDLIFE REVIEW

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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor, and Paul A. Stewart, former assistant editor.

SOILS

Cotton, James A., and others. SOIL SURVEY OF FAYETTE COUNTY, ALABAMA. SCS, Ser. 1962, no. 4. i + 117 p., 26 figs. + single-fold maps based on aerial photos and bound in. Nov. 1965. Sold by Supt. Documents. WR 121: 2
With sections on use of soils for wildlife and wildlife suitability groups.

Craft, Richard W., Jr., and others. SOIL SURVEY OF MARLBORO COUNTY, SOUTH CAROLINA. SCS, Ser. 1962, no. 7. i + 109 p., 22 figs. + single-fold maps based on aerial photos and bound in. Nov. 1965. Sold by Supt. Documents. WR 121: 2
With a section on the management of the soils for wildlife and fish.

Crow, Eron E., and others. SOIL SURVEY OF BAMBERG COUNTY, SOUTH CAROLINA. SCS, Ser. 1962, no. 10. i + 106 p., 20 figs. + single-fold maps based on aerial photos and bound in. Jan. 1966. Sold by Supt. Documents. WR 121: 2
With a section on the management of soils for wildlife and fish.

Hamilton, Vernon L. SOIL SURVEY OF WICHITA COUNTY, KANSAS. SCS, Ser. 1962, no. 8. i + 63 p., 34 figs. + single-fold maps based on aerial photos and bound in. Nov. 1965. Sold by Supt. Documents. WR 121: 2
With a section on management for wildlife.

Harner, Rodney F., and others. SOIL SURVEY OF FINNEY COUNTY, KANSAS. SCS, Ser. 1961, no. 30. i + 91 p., 25 figs. + single-fold maps based on aerial photos and bound in. Sold by Supt. Documents. Nov. 1965. WR 121: 2
With a section on management for wildlife

Koos, William M., and others. SOIL SURVEY OF CROSBY COUNTY, TEXAS. SCS, Ser. 1961, no. 36. i + 70 p., 20 figs. + single-fold maps based on aerial photos and bound in. Sold by Supt. Documents. Jan. 1966. WR 121: 2

Mayko, R. W., and others. SOIL SURVEY OF THE PRINEVILLE AREA, OREGON. SCS, Ser. 1955, no. 12. i + 89 p., 12 figs. + single-fold maps based on aerial photos and bound in. Feb. 1966. Sold by Supt. Documents. WR 121: 2

Neal, H. L., and others. SOIL SURVEY OF CLARKE COUNTY, MISSISSIPPI. SCS, Ser. 1961, no. 32. i + 116 p., 12 figs. + single-fold maps based on aerial photos and bound in. Dec. 1965. Sold by Supt. Documents. WR 121: 2
With a section on wildlife.

Weber, Herman L., and others. SOIL SURVEY OF GRAND TRAVERSE COUNTY, MICHIGAN. SCS, Ser. 1958, no. 34. i + 141 p., 13 figs. + single-fold maps based on aerial photos and bound in. Jan. 1966. Sold by Supt. Documents. WR 121: 2
With a section on wildlife areas.

Welch, Lawrence E., and others. SOIL SURVEY OF THE ALAMEDA AREA, CALIFORNIA. SCS, Ser. 1961, no. 41. i + 95 p., 20 figs. + single-fold maps based on aerial photos and bound in. Mar. 1966. Sold by Supt. Documents. WR 121: 2

Wertz, William A. INTERPRETATION OF SOIL SURVEYS FOR WILDLIFE MANAGEMENT. Am. Midland Nat. 75(1): 221-231, 6 figs. Jan. 1966. WR 121: 2
[U. S. Forest Serv., 710 North 6th St., Milwaukee, Wis.] Abstract: A soil survey on the Eagle River Ranger District of the Nicolet National Forest in Wisconsin described soils in terms of natural habitat conditions for white-tailed deer and ruffed grouse. Individual soils were characterized by plant-cover relationships, and certain natural edge conditions were noted where contrasting soils supporting contrasting vegetation cover types occurred together on the landscape. The District was divided into five soil management areas based on soil association and related management needs, and these areas were rated according to relative suitability for wildlife habitat by comparing the miles of soil-associated natural edge within each area. The survey provided a mechanism to select, pinpoint, or concentrate wildlife management activities in the interest of better multiple use management. It also pointed out the need for cooperation between the biologist and soil scientist to develop methods for practical application of soil survey information.

SOILS—Continued

Winkley, Harvel E. SOIL SURVEY OF MERRIMACK COUNTY, NEW HAMPSHIRE. SCS, Ser. 1961, no. 22. 1 + 94 p., 15 figs. + single-fold maps based on aerial photos and bound in. June 1965. Sold by Supt. Documents. WR 121: 3
With a section entitled: Use of soils for wildlife.

BIBLIOGRAPHIES, DIRECTORIES, BIOGRAPHY, HISTORY

Schorger, A. W. IN MEMORIAM: PAUL LESTER ERRINGTON. Auk 83(1): 52-65, 1 pl. Jan. 1966. WR 121: 3
[Univ. Wis., Madison.] A tribute to Dr. Errington and a bibliography of 204 of his publications.

PLANTS—GENERAL, ECOLOGY, TECHNIQUES

Olson, Jerry S. GROSS AND NET PRODUCTION OF TERRESTRIAL VEGETATION. Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 99-118, 3 figs. Mar. 1964. WR 121: 3
[Oak Ridge Natl. Lab., Oak Ridge, Tenn.] Impressive bibliography.

PLANTS—FLORAS, COMMUNITIES, TAXONOMY

Fore, Paul L., D. Gene Stookey, and John D. Parsons. NEW DISTRIBUTIONAL RECORDS OF AQUATIC VASCULAR PLANTS FROM SOUTHERN ILLINOIS. Trans. Ill. State Acad. Sci. 58: 27-38, 3 figs. 1965. WR 121: 3
[Southern Ill. Univ., Carbondale.] Abstract: Investigation of aquatic environments in the twenty-three southern counties of Illinois has yielded 217 county distributional records of vascular plants. A short discussion of geographical distributions pertaining primarily to southern Illinois accompanies the specimens cited in the annotated checklist.

Mohlenbrock, Robert H., and John W. Voigt. AN ANNOTATED CHECKLIST OF VASCULAR PLANTS OF THE SOUTHERN ILLINOIS UNIVERSITY PINE HILLS FIELD STATION AND ENVIRONS. Trans. Ill. State Acad. Sci. 58(4): 268-301, 1 fig. 1965. WR 121: 3
[Southern Ill. Univ., Carbondale.] Abstract: A descriptive account of the Pine Hills Field Station and environs in Union County, Illinois is presented, followed by an annotated checklist of the vascular plants thus far found in the area. A total of 1003 species is included. This high total is a reflection of the diverse habitats found in the area.

Poore, M. E. D. INTEGRATION IN THE PLANT COMMUNITY. Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 213-226, 5 figs. Mar. 1964. WR 121: 3
[Univ. Malaya, Kuala Lumpur, Malaya.]

PLANTS—FOREST SURVEYS

Choate, Grover A. FORESTS IN UTAH. USDA, US Forest Serv. Resource Bull. INT-4. 63 p., illus. 1965. WR 121: 3
The first complete inventory shows that Utah has nearly 15 million acres of forest land. Four million acres are commercial forest and are largely in National Forest and other public ownerships.—From abstr.

Sternitzke, Herbert S. LOUISIANA FORESTS. USDA, US Forest Serv. Res. Bull. SO-7. 31 p., illus. 1965. WR 121: 3
"Today forests cover 56 percent, 16 million acres, of the land."

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Bannikov, A. G. [FAUNA OF THE TROPICAL FORESTS OF SOUTHWESTERN CHINA.] Priroda 10: 67-70. 1958. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1959, no. 44223. Transl. of Russian abstr.] WR 121: 4

Barrau, Jacques. ESQUISSE ECOLOGIQUE DE LA NOUVELLE-GUINÉE. [ECOLOGICAL SKETCH OF NEW GUINEA.] Terre & Vie 1959(4): 291-306, 4 figs. Oct.-Dec. 1959. In French. WR 121: 4

Bourlière, Francois, and Maxime Lamotte. LES CONCEPTS FONDAMENTAUX DE LA SYNECOLOGIE QUANTITATIVE. [THE FUNDAMENTAL CONCEPTS OF QUANTITATIVE SYNECOLOGY.] Terre & Vie 1962(4): 329-350, 5 figs. Oct.-Dec. 1962. In French. WR 121: 4

Darling, F. Fraser. CONSERVATION AND ECOLOGICAL THEORY. Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 39-45. Mar. 1964. WR 121: 4
[Conserv. Foundation, New York, N. Y.]

Degerbøl, Magnus. SOME REMARKS ON LATE- AND POSTGLACIAL VERTEBRATE FAUNA AND ITS ECOLOGICAL RELATIONS IN NORTHERN EUROPE. Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 71-85, 2 figs. Mar. 1964. WR 121: 4
[Univ. Copenhagen, Copenhagen, Denmark.]

Engel, Robert L., and Terry A. Vaughan. A COYOTE-GOLDEN EAGLE ASSOCIATION. J. Mammal. 47(1): 143. Feb. 1966. WR 121: 4
[Central Plains Expt1. Range, Nunn, Colo.]

Fitch, Henry S. THE UNIVERSITY OF KANSAS NATURAL HISTORY RESERVATION IN 1965. Univ. Kans. Museum Nat. Hist., Misc. Publ. no. 42. p. 1-60, 18 figs. 10 Dec. 1965. WR 121: 4
Included are a description of the 750 acre area and its management and lists of plants and animals found there.

Hairston, Nelson G. STUDIES ON THE ORGANIZATION OF ANIMAL COMMUNITIES. Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 227-239, 1 fig. Mar. 1964. WR 121: 4
[Univ. Mich., Ann Arbor.]

Izmailov, I. V., G. M. Khabaeva, and G. K. Borovitskaya. [A REVIEW OF STUDIES IN TERRESTRIAL VERTEBRATE FAUNA OF BURYATIYA IN THE PAST 40 YEARS.] Uch. Zap. Buryatskii Gos. Pedagog. Inst. 25: 80-104. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 19I318. In Russian.] WR 121: 4

Jackson, G., and J. S. Gartlan. THE FLORA AND FAUNA OF LOLUI ISLAND, LAKE VICTORIA. A STUDY OF VEGETATION, MEN AND MONKEYS. J. Ecol. 53(3): 573-597, 10 figs. + 1 pl. Nov. 1965. WR 121: 4
[Makerere Univ. Coll., Kampala, Uganda.]

Keith, Lloyd B. EARLY NOTES ON WILDLIFE FROM NEW SAREPTA, ALBERTA. Canadian Field-Nat. 79(1): 29-34, 1 fig. Jan.-Mar. 1965. WR 121: 4
[Univ. Wis., Madison.]

Korotkikh, A. N., A. P. Kuzyakin, and L. M. Suchelenkova. [ENDEMIC FOREST BIRDS AND ANIMALS OF KUNASHIR ISLAND.] Uch. Zap. Moskov. Obl. Pedagog. Inst. 126: 67-75. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 19I320. In Russian.] WR 121: 4

Kovalenkov, A. [WILDLIFE RESOURCES IN THE AMU-DARYA DELTA.] Okhota & Okhotnich'e Khoz. 1959(7): 9. 1959. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., no. 33235. Transl. of Russian abstr.] WR 121: 4

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Kurentsov, A. I. [THE ZOOGEOGRAPHY OF KAMCHATKA.] In: (The fauna of Kamchatka Oblast.) Akad. Nauk SSSR (Moscow-Leningrad). p. 4-60. 1963. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1964, no. 11D26. Transl. of Russian abstr.] WR 121: 5

Lamotte, M., P. Aguesse, and R. Roy. DONNEES QUANTITATIVES SUR UNE BIOCOENOSE OUEST-AFRICAINE : LA PRAIRIE MONTAGNARDE DU NIMBA (GUINÉE). [QUANTITATIVE DATA ON A WEST-AFRICAN BIOTIC COMMUNITY : THE MONTANE PRAIRIES OF NIMBA (GUINEA).] Terre & Vie 1962(4): 351-370, 4 figs. + 2 pls. Oct.-Dec. 1962. In French with English summ. WR 121: 5
[L'Ecole Normale Supérieure, Paris, France.] Invertebrates and amphibians.

Laptev, I. P. [THE TERRESTRIAL VERTEBRATE FAUNA OF THE OB' RIVER BASIN LOWLAND AND QUESTIONS OF COMMERCIAL HUNTING.] Trudy Tomskogo Univ. 152: 279-292. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I314. Transl. of Russian abstr.] WR 121: 5

Lemon, Paul C. NATURAL COMMUNITIES OF THE MALAWI NATIONAL PARK (NYIKA PLATEAU). Government Printer (Zomba, Malawi). v + 70 p., 14 figs. 1964. WR 121: 5
[State Univ. N. Y., Albany.] The herds of zebra, roan antelope, reedbuck, duiker, bushbuck and hartebeest appear to be in excellent condition, but more intensive management is needed for eland to increase more nearly at their optimum rate. Cheetah, leopard, lion and other carnivores are too few. The forage plants are well-suited to the native grazing wildlife but substandard for any domestic animals. Increasing the evergreen forest patches and annual controlled burning of one-third to one-half of the central grassland area are the recommended management practices.--From summ.

Pearsall, W. H. THE DEVELOPMENT OF ECOLOGY IN BRITAIN. Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 1-12, 1 fig. Mar. 1964. WR 121: 5
[Morecambe, Lancastershire, England.] Three phases are recognized: pre-1914, between the wars, and post-WW II.

Pianka, Eric R. LATITUDINAL GRADIENTS IN SPECIES DIVERSITY: A REVIEW OF CONCEPTS. Am. Nat. 100(910): 33-46. Jan.-Feb. 1966. WR 121: 5
[Princeton Univ., P. O. Box 704, Princeton, N. J.] Summary: The six major hypotheses of the control of species diversity are restated, examined, and some possible tests suggested. Although several of these mechanisms could be operating simultaneously, it is instructive to consider them separately, as this can serve to clarify our thinking, as well as assist in the choice of the best test situations for future examination.

Valverde, Jose A. REMARQUES SUR LA STRUCTURE ET L'EVOLUTION DES COMMUNAUTES DE VERTEBRES TERRESTRES. I. STRUCTURE D'UNE COMMUNAUTE. II. RAPPORTS ENTRE PREDATEURS ET PROIES. [REMARKS UPON THE STRUCTURE AND EVOLUTION OF TERRESTRIAL VERTEBRATE COMMUNITIES. I. STRUCTURE OF A COMMUNITY. II. RELATIONSHIP BETWEEN PREDATORS AND PREY.] Terre & Vie 1964(2): 121-154, 10 figs. Apr.-June 1964. In French. WR 121: 5
[Consejo Superior de Investigaciones Scientificas, Madrid, Spain.]

Watt, Alex S. THE COMMUNITY AND THE INDIVIDUAL. Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 203-211. Mar. 1964. WR 121: 5
[Botany School, Cambridge, England.]

Wynne Edwards, V. C. SELF-REGULATING SYSTEMS IN POPULATIONS OF ANIMALS. A NEW HYPOTHESIS ILLUMINATES ASPECTS OF ANIMAL BEHAVIOR THAT HAVE HITHERTO SEEMED UNEXPLAINABLE [PICES, AVES, MAMMALIA]. Science 147(3665): 1543-1548. 1965. [From Biol. Abstr. 46(15), 1965.] WR 121: 5
[Marischal Coll., Univ. Aberdeen, Aberdeen, Scotland.]

WILDLIFE--NATURAL AREAS & REFUGES

Eggeling, W. J. A NATURE RESERVE MANAGEMENT PLAN FOR THE ISLAND OF RHUM, INNER HEBRIDES. J. Appl. Ecol. 1(2): 405-419, 2 figs. Nov. 1964. WR 121: 6

[Nature Conservancy, Edinburgh, Scotland.] Topography, geology, climate, soils, vegetation, fauna, history and land use of the island of Rhum. "There are few species of wild mammals on the island, perhaps, in part, because of large human populations in the past. There are no rabbits or hares, no carnivores except otters and seals; no hedgehogs, voles, house mice, moles, squirrels or roe deer. The species which occur are the pigmy shrew, pipistrelle bat, field mouse (Apodemus sylvaticus hebridensis), brown rat, grey seal, common seal and red deer (re-introduced about 1845, after the native stock had been exterminated at the end of the eighteenth century).... Altogether 142 species and subspecies have been recorded since the island became a reserve; fifty-five species have bred regularly and another twenty sporadically.... The only reptile is the common lizard, and the only amphibian the palmate newt."

WILDLIFE--NATURE PROTECTION & RARE & EXTINCT SPECIES

Averin, Yu. V. [SPECIES OF VERTEBRATES OF THE SOUTHERN PART OF THE PRUTDNEISTER INTERFLUVE WHICH ARE TO BE DESTROYED OR CONSERVED.] In: (The Fifth Conservation Conference, 1962.) Kartya Moldovenyaske (Kishinev). p. 245-248. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 12I293. Transl. of Russian abstr.] WR 121: 6

Lévêque, Raymond. LE STATUT ACTUEL DES VERTEBRES RARES ET MENACES DE L'ARCHIPEL DES GALAPAGOS. [THE CURRENT STATUS OF RARE AND ENDANGERED VERTEBRATES OF THE GALAPAGOS ARCHIPELAGO.] Terre & Vie 1963(4): 397-430, 9 maps + 6 pls. Oct.-Dec. 1963. In French with English summ. WR 121: 6

Summary: During a 14 months stay in the Galapagos islands the author was able to study the local distribution and the numbers of some of the scarcest endemic vertebrates of the archipelago. His results show that the fur-seal population reaches up to about 4000 head, while there are about 2000 breeding pairs of albatrosses, 1500 penguins, 1000 flightless cormorants and no more than 100 to 150 flamingoes. One thousand tortoises at least were counted on Indefatigable. Notes are also given on the breeding seasons and clutch-size of various birds.

WILDLIFE--PARASITES & DISEASES

Eklund, Carl M. ECOLOGICAL PATTERNS OF ARTHROPOD-BORNE (DIPTERA, ACARINA) VIRUS GROUPS BASED ON VECTOR (AVES, MAMMALIA) RELATIONSHIPS (MAN). Pacific Sci. Congr. Abstr. Symp. Pap. 10: 414-415. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 6

[Rocky Mountain Lab., Nat. Inst. Allergy & Infect. Dis., Hamilton, Mont.] Abstract only.

Johnson, Harald Norlin. OTHER MODES OF TRANSMISSION AND OF ARTHROPOD-BORNE (DIPTERA, ACARINA) VIRUSES BETWEEN ANIMAL HOST (AVES, MAMMALIA). Pacific Sci. Congr. Abstr. Symp. Pap. 10: 416. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 6

[Viral & Rickettsial Dis. Lab., Calif. State Dept. Public Health, Berkeley.] Abstract only.

Rueger, Myrtle E., Theodore A. Olson, and Roger D. Price. STUDIES OF POTENTIAL AVIAN, ARTHROPOD AND MAMMALIAN HOSTS OF MOSQUITO-BORNE ARBOVIRUSES IN THE MINNESOTA AREA. Am. J. Epidemiol. 83(1): 33-37. Jan. 1966. WR 121: 6

[Univ. Minn., Minneapolis.] Summary: Mosquitoes and blood and tissue specimens from wild birds, rodents, and bats collected during 1958 through 1961 failed to yield any arbovirus isolates. The results of antibody studies on sentinel pigeons, domestic chickens, wild birds, bats, and small rodents indicate the presence of a continued but low activity of WE and SLE viruses.

Smith, C. E. Gordon. FACTORS IN THE MAINTENANCE OF LEPTOSPIROSIS IN WILD ANIMALS IN MALAYA. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 433. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 7
[London Sch. Hyg. & Trop. Med., London, England.]

WILDLIFE--POPULATIONS & FLUCTUATIONS

Curry-Lindahl, Kai. CHANGEMENTS DE PAYSAGE ET CHANGEMENTS DE FAUNE EN SUÈDE. [CHANGES IN LANDSCAPE AND CHANGES OF FAUNA IN SWEDEN.] Terre & Vie 1960(4): 169-193, 5 figs. July-Dec. 1960. In French. WR 121: 7

Pfeffer, Pierre. CHANGEMENTS OBSERVES DANS LE PEUPLEMENT ANIMAL DES REGIONS NATURELLES DE L'U.R.S.S., DU XIII^e SIECLE A NOS JOURS. [CHANGES OBSERVED IN THE ANIMAL POPULATIONS OF THE NATURAL REGIONS OF THE USSR FROM THE 13TH CENTURY TO THE PRESENT.] Terre & Vie 1961(4): 446-455, 2 figs. Oct.-Dec. 1961. In French. WR 121: 7

Prévost, J. DENSITES DE PEUPLEMENT ET BIOMASSES DES VERTEBRES TERRESTRES DE L'ARCHIPEL DE POINTE GEOLOGIE, TERRE ADELIE. [DENSITIES OF POPULATION AND BIOMASSES OF TERRESTRIAL VERTEBRATES OF THE GEOLOGY POINT ARCHIPELAGO, ADELIE LAND.] Terre & Vie 1963(1): 35-49, [3] figs. + 4 pls. Jan.-Mar. 1963. In French. WR 121: 7
[Faculté Méd. Paris, Paris, France.]

WILDLIFE--BIOMETRICS

Chapman, Douglas G., and Garth I. Murphy. ESTIMATES OF MORTALITY AND POPULATION FROM SURVEY-REMOVAL RECORDS. Biometrics 21(4): 921-935. Dec. 1965. WR 121: 7
[Univ. Wash., Seattle.]

Chapman, D. G., and W. S. Overton. ESTIMATING AND TESTING DIFFERENCES BETWEEN POPULATION LEVELS BY THE SCHNABEL ESTIMATION METHOD. J. Wildl. Mgmt. 30(1): 173-180. Jan. 1966. WR 121: 7
[Univ. Wash., Seattle.] Abstract: In the Schnabel method of estimating number of animals, the number of recaptures has been assumed to follow a Poisson distribution. This approximation is useful in testing differences in population levels when the Schnabel method is used for estimation, since the distribution of recaptures from one population, conditional on the total number of recaptures from both populations, is approximately binomial with parameters n and p, where p is a function of the parameters of the two Poisson distributions. Tests based on this conditional binomial distribution are described. Confidence limits of the population numbers have been considered and a stop rule developed for the Schnabel experiment used at the second stage of a paired comparison.

Robson, D. S., and W. A. Flick. A NONPARAMETRIC STATISTICAL METHOD FOR CULLING RECRUITS FROM A MARK-RECAPTURE EXPERIMENT. Biometrics 21(4): 936-947, 1 fig. Dec. 1965. WR 121: 7
[Cornell Univ., Ithaca, N. Y.]

Sokal, Robert R. STATISTICAL METHODS IN SYSTEMATICS. Biol. Reviews 40(3): 337-391, 5 figs. Aug. 1965. WR 121: 7
[Univ. Kans., Lawrence.]

WILDLIFE--TECHNIQUES

Basile, Joseph V., and Selar S. Hutchings. TWIG DIAMETER-LENGTH-WEIGHT RELATIONS OF BITTERBRUSH. J. Range Mgmt. 19(1): 34-38, 4 figs. Jan. 1966. WR 121: 8

[Intermountain Forest & Range Expt. Sta., Bozeman, Mont.] Highlight: Relations between bitterbrush twig diameters and their lengths and weights are sufficiently consistent to enable wildlife technicians to estimate browse utilization solely from postbrowsing measurements of the diameters and lengths or weights of the remaining portion of twigs.

Hinson, W. H., and R. Kitching. A READILY CONSTRUCTED TRANSISTORIZED INSTRUMENT FOR ELECTRICAL RESISTANCE MEASUREMENTS IN BIOLOGICAL RESEARCH. J. Appl. Ecol. 1(2): 301-305, 4 figs. Nov. 1964. WR 121: 8

[Forest Res. Sta., Farnham, Surrey, England.] Summary: A description is given of an alternating current instrument which is suitable for measuring electrical resistance in a number of biological investigations. Circuit and constructional details are given.

McCulloch, J. S. G., and L. M. Talbot. COMPARISON OF WEIGHT ESTIMATION METHODS FOR WILD ANIMALS AND DOMESTIC LIVESTOCK. J. Appl. Ecol. 2(1): 59-69, 2 figs. May 1965. WR 121: 8

[Hydraulics Res. Sta., Wallingford, Berkshire, England.] Summary: The use of body conformation measurements for liveweight assessment has been shown to be of more general application for East African plains animals than for domestic stock, perhaps because wild animals tend to maintain more constant condition despite marked changes in environment and in the availability of food. Chest girth has proved the most useful measurement. Liveweight prediction equations for various species are presented as linear regressions, as power law relationships and in terms of an index of body volume, $(\text{chest girth})^2 \times (\text{body length})$.

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Grigor'ev, N. D. [HOW TO PRESERVE, INCREASE, AND RATIONALLY UTILIZE THE HUNTING RESOURCES OF TATAR ASSR.] Priroda Tatarii & Ee Okhrana (Kazan) 1: 98-110. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 18I271. Transl. of Russian abstr.] WR 121: 8

Lamson, Arroll L. A BRIEF HISTORY OF GAME MANAGEMENT IN CONNECTICUT. Conn. Wildl. Conserv. Bull. 12(1): 3-4. Jan.-Feb. 1966. WR 121: 8

Basically, with periods of overlap, the emphasis has been as follows: (1) 1866 and previous--Restriction of hunting; (2) 1885--Control of predatory or competing species; (3) 1895--Establishment of sanctuaries and refuges; (4) 1908--Artificial replenishment and the introduction of exotics; (5) 1930--Research and investigation; (6) 1950--Management of habitat.

Talbot, Lee M. A SURVEY OF PAST AND PRESENT WILDLIFE RESEARCH IN EAST AFRICA. East African Wildl. J. 3: 61-85. Aug. 1965. WR 121: 8

[2590 Cedar St., Berkeley, Calif.]

Woodley, F. W. GAME DEFENCE BARRIERS. East African Wildl. J. 3: 89-94, 5 figs. Aug. 1965. WR 121: 8

[P. O. Box 22, Nyeri, Kenya.] "The only satisfactory answer to crop-raiding [by wildlife] lies in the creation of physical barriers.... Trial and error over a five-year period has proved the most successful barrier to be a sloped ditch, extra deep at the bottom, presenting a 7 to 8 foot outside bank or wall, topped with an angled wire fence."

WILDLIFE--HUNTING AREAS & PROBLEMS

Danilov, D. N. [COMMERCIAL HUNTING IN THE USSR. THE PRODUCTIVITY OF HUNTING LANDS.] Goslesbumizdat (Moscow). 371 p., illus., maps. 1963. Price 1 ruble 32 kopecks. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 21I270K. Transl. of Russian abstr.] WR 121: 9

This book is based on a study of the productivity of hunting lands, chiefly forest, but also plowland, pasture, bog, lakes and reservoirs, and tundra, in the USSR.

WILDLIFE--INTRODUCTIONS

Gullion, Gordon W. A CRITIQUE CONCERNING FOREIGN GAME BIRD INTRODUCTIONS. Wilson Bull. 77(4): 409-414. Dec. 1965. WR 121: 9

[Univ. Minn., St. Paul.] "It seems the support of the [Foreign Game Bird Introductions] program has been based on the demand of some segments of the hunting public for more game to shoot, and rather than face the reality that most of our problems can be resolved by more efficient utilization of extant game resources, some members of the wildlife profession have looked to foreign lands seeking species which will supposedly thrive where our native species will not. I believe it is safe to say that many biologically trained administrators officially supporting this program are doing so in conflict with their personal beliefs.... Perhaps the most unhappy aspect of the exotic program is that the search for a cornucopia of imported game birds diverts scarce resources and attention away from the research necessary for developing sound management practices leading to better handling of existing native and exotic upland game bird resources."

WILDLIFE--FOOD HABITS & TECHNIQUES

McConnell, B. R., and G. A. Garrison. SEASONAL VARIATIONS OF AVAILABLE CARBOHYDRATES IN BITTERBRUSH. J. Wildl. Mgmt. 30(1): 168-172, 1 fig. Jan. 1966. WR 121: 9

[Pacific Northwest Forest & Range Expt. Sta., Portland, Oreg.]

WETLANDS & WILDLIFE

Minoranskii, V. A. [EFFECT OF HYDROTECHNICAL CONSTRUCTIONS ON THE BIRDS OF EUROPEAN USSR.] Zool. Zhur. 43(7): 1047-1055. 1964. [From Biol. Abstr. 46 (18), 1965. In Russian with English summ.] WR 121: 9

FARMLAND & WILDLIFE

Leite, Edward A. FARM GAME HUNTING PRESSURE AND HARVEST ON THE DELAWARE WILDLIFE AREA. Game Res. Ohio 3: 27-37, 5 figs. July 1965. WR 121: 9

[Olentangy Wildl. Expt. Sta., Ashley, Ohio.]

Russell, Kenneth R. UPLAND GAME POPULATION AND HARVEST TRENDS, 1959-1963. Game Res. Ohio 3: 1-26, 12 figs. July 1965. WR 121: 9

[Olentangy Wildl. Expt. Sta., Ashley, Ohio.] Pheasant, rabbit, and quail populations over the entire state have declined during the past 5 years. Some of the possible reasons for the decline are discussed. Fall pheasant harvests could be increased by about 10 percent without affecting pheasant populations. The quail population decline was not due to hunting. Pheasant sex ratio information collected in winter by Division field men provided the best available estimate of the proportionate harvest of cocks, whereas the spring data collected by rural mail carriers provided the best estimate of the breeding population sex ratio. Opening day hunter bag check results were unreliable in reflecting annual population level trends, but useful in indicating local opening day hunting conditions. The game harvest mail questionnaire was concluded to be an invalid technique for measuring harvest rates and estimating absolute harvest by species.

RANGELAND & WILDLIFE

Guilloteau, J. LE PROBLEME DES FEUX DE BROUSSE ET DES BRULIS DANS LA MISE EN VALEUR ET LA CONSERVATION DES SOLS EN AFRIQUE, AU SUD DU SAHARA. [THE PROBLEM OF BRUSH FIRES AND OPENINGS IN THE UTILIZATION AND CONSERVATION OF AFRICAN SOILS SOUTH OF THE SAHARA.] Terre & Vie 1958(3): 161-185. July-Sept. 1958. In French. WR 121: 10

Mackie, Richard John. RANGE ECOLOGY AND RELATIONS OF MULE DEER, ELK, AND CATTLE IN THE MISSOURI RIVER BREAKS, MONTANA. Ph.D. thesis, Mont. State Univ. 245 p. 1965. [From Dissertation Abstr. 26(7), 1966.] WR 121: 10

Vesey-FitzGerald, Desmond Foster. THE UTILIZATION OF NATURAL PASTURES BY WILD ANIMALS IN THE RUKWA VALLEY, TANGANYIKA. East African Wildl. J. 3: 38-48, 4 figs., 1 map. Aug. 1965. WR 121: 10
[P. O. Box 3134, Arusha, Tanzania.]

FORESTLAND--FORESTRY & ECOLOGY

Korenberg, E. I. [PRINCIPAL EFFECTS OF FOREST CLEARING ON THE BIRDS OF THE EUROPEAN SOUTHERN TAIGA FORESTS.] Zool. Zhur. 43(5): 735-743, illus. 1964. [From Biol. Abstr. 46(18), 1965. In Russian with English summ.] WR 121: 10

Ovington, J. D. THE ECOLOGICAL BASIS OF THE MANAGEMENT OF WOODLAND NATURE RESERVES IN GREAT BRITAIN. Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 29-37, 2 figs. Mar. 1964. WR 121: 10
[Monks Wood Exptl. Sta., Huntingdon, England.]

Raup, Hugh M. SOME PROBLEMS IN ECOLOGICAL THEORY AND THEIR RELATION TO CONSERVATION. Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 19-28. Mar. 1964. WR 121: 10
[Harvard Forest, Petersham, Mass.] Discussion of ecological theory in forest management and research, the concept of sustained yield and ecology and the resource problem as exemplified by the Harvard Forest and the Harvard Black Rock Forest.

FORESTLAND--MANAGEMENT FOR & DAMAGE BY WILDLIFE

Bencze, L. [CONNECTION BETWEEN COMPOSITION OF THE FORESTS AND OBJECTIVES OF THE FOREST MANAGEMENT AS WELL AS GAME MANAGEMENT.] Erdeszeti Faipari Egyet. Tud. Kozlemenyei 2: 185-202. 1964. [From Bibliog. Agr. 30(1), 1966. In Hungarian with English summ.] WR 121: 10
"Chiefly on wildlife relations."

Clarke, C. H. D. WILDLIFE VALUES IN FORESTRY IN ONTARIO. Forest. Chron. 41 (2): 237-244. June 1965. [From Bibliog. Agr. 30(1), 1966.] WR 121: 10

Debreyne, J. [APROPOS THE DAMAGE BY CERVIDAE AND OTHER ANIMALS.] Rev. Forest. Franc. 17(1): 16-23. Jan. 1965. [From Bibliog. Agr. 30(2), 1966. In French.] WR 121: 10

Ottosson, I. VILTSKADOR OCH SKOGSATERVAXT INOM BLA JUNGFRUNS NATIONALPARK. [WILDLIFE DAMAGE AND FOREST REGENERATION IN BLA JUNGFRUN NATIONAL PARK.] Svenska Vetenskapsakad. Skr. Naturskyddsarenden 52. 30 p., map. 1964. [From Bibliog. Agr. 30(1), 1966. In Swedish.] WR 121: 10

Tanton, M. T. ACORN DESTRUCTION POTENTIAL OF SMALL MAMMALS AND BIRDS IN BRITISH WOODLANDS. Quart. J. Forest. 59(3): 230-234. July 1965. [From Bibliog. Agr. 30(1), 1966.] WR 121: 10

CONTROL OF VEGETATION WITH HERBICIDES, ETC.

Easbach, Alban R. ATTACK ON WATERWEEDS / AQUATIC WEED CONTROL IN NEW JERSEY LAKES. N. J. Outdoors 15(11): 3-10, illus. May 1965. WR 121: 11
[Ariz. Game & Fish Dept., Phoenix.] Review of N. J. aquatic weed control for period 1960-1964.

MAMMALS—GENERAL

Górecki, Andrzej. ENERGY VALUES OF BODY IN SMALL MAMMALS. Acta Theriologica 10(23): 333-352, 5 figs. 30 Nov. 1965. In English with Polish summ. WR 121: 11
[Jagiellonian Univ., Kraków, Poland.] Energy values of the body were examined in 5 spp. of small mammals prevailing in the forest and field ecosystems: Sorex araneus, Apodemus flavicollis, Apodemus agrarius, Clethrionomys glareolus, and Microtus arvalis. The energy value of biomass for all the species and seasons falls within a narrow range of 1301-1693 cal/g, with an average of 1501 cal/g. Consequently, either this mean value, 1.5 Kcal/g, will be used to calculate the productivity of populations of small mammals or the coefficient may be differentiated for seasons and species.—From abstr.

Nikitina, N. A. [A STUDY OF THE CONTACTS AND MOBILITY OF SMALL MAMMALS.] In: (Methods of studying natural foci of human diseases.) Meditsina (Moscow). p. 192-208. 1964. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 19I283. Transl. of Russian abstr.] WR 121: 11

Pucek, Michalina. POLISH THERIOLOGICAL BIBLIOGRAPHY, 1964-1965. Acta Theriologica 10(26): 439-453. 30 Nov. 1965. WR 121: 11
[Polish Acad. Sci., Mammals Res. Inst., Białowieża, Poland.] Listing of titles of papers by years with a subject index and a list of periodicals and their abbreviations.

Skalon, V. N. [THE CONSERVATION AND EXPLOITATION OF GAME ANIMALS AS A WHOLE.] In: (Conservation problems of Siberia and the Far East.] Sibirsk. Otd. Akad. Nauk SSR (Novosibirsk). p. 86-92. 1963. [From Biol. Abstr. 46 (18), 1965, from Referat. Zhur., Biol., 1964, no. 12I292. Transl. of Russian abstr.] WR 121: 11

Tupikova, N. V. [THE STUDY OF THE REPRODUCTION AND AGE COMPOSITION OF A POPULATION OF SMALL MAMMALS.] In: (Methods of studying natural foci of human diseases.) Meditsina (Moscow). p. 154-191, illus. 1964. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 19I284. Transl. of Russian abstr.] WR 121: 11

MAMMALS—TECHNIQUES

Child, Graham, Lyle Sowls, and B. L. Mitchell. VARIATIONS IN THE DENTITION, AGEING CRITERIA AND GROWTH PATTERNS IN WART HOG. Arnoldia 1(38): 1-23, 11 figs. 24 July 1965. WR 121: 11
[Natl. Museum, Bulawayo, Rhodesia.]

Child, Graham, Lyle K. Sowls, and Gary L. Richardson. USES AND LIMITATIONS OF EYE-LENS WEIGHT FOR AGEING WART HOG. Arnoldia 1(39): 1-2, 1 fig. 29 July 1965. WR 121: 11
[Natl. Museum, Bulawayo, Rhodesia.] "The present data suggests that lens weight might be useful for ageing wart hog up to about 15 months of age, but that after this the overlap between successive yearly samples, in this seasonally breeding species, are so great that it is of little use for separating specimens in older age classes. As the separation can be achieved from the state of tooth eruption, and as the tooth formula is easier to obtain than the eye-lens weight, especially under field conditions, there appear to be few advantages for using the lens weight for ageing."

MAMMALS—TECHNIQUES—Continued

King, J. M., and B. H. Carter. THE USE OF THE ORIPAVINE DERIVATIVE M.99 FOR THE IMMOBILISATION OF THE BLACK RHINOCEROS (DICEROS BICORNIS) AND ITS ANTAGONISM WITH THE RELATED COMPOUND M.285 OR NALORPHINE. East African Wildl. J. 3: 19-26, 3 figs. Aug. 1965. WR 121: 12
[Univ. Cambridge, Cambridge, England.]

Klingel, Hans. NOTES ON TOOTH DEVELOPMENT AND AGEING CRITERIA IN THE PLAINS ZEBRA EQUUS QUAGGA BOEHMI MATSCHIE. East African Wildl. J. 3: 127-129, 1 fig. Aug. 1965. WR 121: 12
[P. O. Box 3134, Arusha, Tanzania.] Includes a table showing eruption, replacement and wear of teeth from birth to the age of about 18 to 20 years. The ages up to two years are accurate and estimated thereafter.

Kucheruk, V. V. [NEW METHODS IN NUMERICAL CENSUSES OF HARMFUL RODENTS AND SHREWS.] In: (The organization and counting methods for birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 159-183. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 12I204. Transl. of Russian abstr.] WR 121: 12

Kucheruk, V. V., N. V. Tupikova, V. S. Evseeva, and V. A. Zaklinskaya. [AN EXPERIMENT IN THE CRITICAL ANALYSIS OF THE QUANTITATIVE ESTIMATION OF RODENTS AND INSECTIVORES USING A TRAPLINE.] In: (The organization and counting methods for birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 218-227. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 12I205. Transl. of Russian abstr.] WR 121: 12

Kuzyakin, A. P. [THE USE OF PLOWED FURROWS TO MAKE A CENSUS OF SMALL MAMMALS.] In: (The organization and counting methods for birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 228-230. 1963. [From Biol. Abstr. 46 (18), 1965, from Referat. Zhur., Biol., 1964, no. 12I206. Transl. of Russian abstr.] WR 121: 12

Malinow, Manuel R., and Ann Corcoran. GROWTH OF THE LENS IN HOWLER MONKEYS (ALOUATTA CARAYA). J. Mammal. 47(1): 58-63, 2 figs. Feb. 1966. WR 121: 12
[Oreg. Regional Primate Res. Center, Beaverton, Oreg.] A close relationship was observed between dry weight of the lens and wear of permanent dentition in postpuberal monkeys.—From abstr.

Tupikova, N. V., V. A. Zaklinskaya, and V. S. Evseeva. [MAKING A CENSUS AND MASS CAPTURE OF SMALL MAMMALS BY THE USE OF FENCING.] In: (The organization and counting methods for birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 231-236. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 12I207. Transl. of Russian abstr.] WR 121: 12

Williams, R. M., J. H. Darwin, and K. Wodzicki. EFFECTIVENESS OF RABBIT AND HARE CONTROL BY NIGHT-SHOOTING. New Zealand J. Sci. 7(3): 367-386, illus. 1964. [From Biol. Abstr. 46(21), 1965.] WR 121: 12

MAMMALS—FAUNAS AND MANUALS

Hall, E. Raymond. NAMES OF SPECIES OF NORTH AMERICAN MAMMALS NORTH OF MEXICO. Univ. Kans. Museum Nat. Hist. Misc. Publ. no. 43. p. 1-16. 10 Dec. 1965. WR 121: 12
A revision of Misc. Publ. no. 14 (Vernacular names for North American mammals north of Mexico). [WR 89: 23.]

Harrison, John. AN INTRODUCTION TO THE MAMMALS OF SABAH. Sabah Soc. (Jesselton). 244 p., illus. 1964. [From J. Mammal. 47(1), 1966.] WR 121: 12

Ingles, J. M. ZAMBIAN MAMMALS COLLECTED FOR THE BRITISH MUSEUM (NATURAL HISTORY) IN 1962. Puku 3: 75-86. 1965. WR 121: 12
[British Museum, London, England.] Sixty-nine species are represented.

Nekipelov, N. V. [THE STRUCTURE OF MAMMALIAN GROUPINGS IN THE BASIC LANDFORMS OF THE ASIATIC PART OF THE USSR AND MONGOLIA.] Izv. Irkutskogo Nauch.-Issled. Protivochumnogo Inst. Sibiri Dal'nego Vost. 25: 169-204. 1963. [From Biol. Abstr. 46(21), 1965. In Russian.] WR 121: 13

Reimers, N. F., and G. A. Voronov. [INSECTIVORES AND RODENTS OF THE UPPER LENA RIVER.] Knigoizdat (Irkutsk). 191 p., illus., maps. 1963. Price 95 kopecks. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 16I254K. Transl. of Russian abstr.] WR 121: 13

Semenov, M. Ya. [THE INSECTIVOROUS, RODENT, AND PREDACEOUS MAMMALS OF ROSTOV OBLAST.] Izv. Rostovskogo Na. Donu. Nauch.-Issled. Inst. Epidemiol. Mikrobiol. Gigi 24: 180-190. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 19I254. Transl. of Russian abstr.] WR 121: 13

MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

Dreux, Ph. EVALUATION DE L'EFFECTIF D'UNE POPULATION PAR LA METHODE DES MARQUAGES ET RECAPTURES. [ESTIMATION OF THE ACTUAL POPULATION BY THE MARKING-RECAPTURE METHOD.] Terre & Vie 1963(3): 367-381, 2 figs. July-Sept. 1963. In French. WR 121: 13
[l'Ecole Normale Supériere, Paris, France.]

Lidicker, W. Z., Jr. COMPARATIVE STUDY OF DENSITY REGULATION IN CONFINED POPULATIONS OF FOUR SPECIES OF RODENTS. Res. Population Ecol. 7(2): 57-72, 5 figs. Dec. 1965. In English with Japanese summ. WR 121: 13
[Univ. Calif., Berkeley.] "Mus musculus, Peromyscus maniculatus, P. truei and Oryzomys palustris."

Mohr, Carl O. CALCULATION OF AREA OF ANIMAL ACTIVITY BY USE OF MEDIAN AXES AND CENTERS IN SCATTER DIAGRAMS. Res. Population Ecol. 7(2): 73-86, 5 figs. Dec. 1965. In English with Japanese summ. WR 121: 13
[Univ. Calif., Berkeley.] The median linear-composite method yields a more compact central area, or core, than do the circular and minimum home-range methods, but it also yields a progressively wider scattering of isolated points toward the outer part of the range. The result is a compact core of points, which is recommended as useful.--From summ.

Saint Girons, Marie-Charlotte. LES MAMMIFÈRES DES PYRÉNÉES-ORIENTALES. III. RESULTATS DE PIÉGEAGES DANS UN BRULIS EN 1959 ET 1960. [THE MAMMALS OF THE EASTERN PYRENEES. 3. RESULTS OF TRAPPING IN A BURNED-OVER AREA IN 1959 AND 1960. Vie Milieu 13(2): 385-388. 1962. [From Biol. Abstr. 46(17), 1965. In French.] WR 121: 13
[Lab. Ecol., Brunoy, France.]

Sanderson, Glen C. THE STUDY OF MAMMAL MOVEMENTS--A REVIEW. J. Wildl. Mgmt. 30(1): 215-235. Jan. 1966. WR 121: 13
[Ill. Nat. Hist. Surv., Urbana.] A review paper with a 118-item bibliography. "This paper reviews some of the techniques used for studying mammal movements, discusses the more common methods used to evaluate and interpret movements of mammals, and briefly looks at some of the needs in this area."

Spitz, F. LES TECHNIQUES D'ECHANTILLONNAGE UTILISEES DANS L'ETUDE DES POPULATIONS DE PETITS MAMMIFERES. [SAMPLING TECHNIQUES USED FOR SMALL MAMMAL POPULATION STUDIES.] Terre & Vie 1963(2): 203-237, 4 figs. Apr.-June 1963. In French. WR 121: 13
Inst. Natl. Recherche Agronomique, Jouy-en-Josas (S.-et-O.), France.] Review paper.

Tanaka, Ryo. ON THE PROBLEM OF TRAP-RESPONSE TYPES OF SMALL MAMMAL POPULATIONS. Res. Population Ecol. 5(2): 139-146, 1 fig. Dec. 1963. In English with Japanese summ. WR 121: 14
[Kochi Women's Univ., Kochi, Japan.]

Zelenka, Georges, and Roland Pricam. VARIATIONS D'EFFECTIFS DES POPULATIONS DE PETITS MAMMIFERES REVELEES PAR LE REGIME ALIMENTAIRE D'UN RAPACE NOCTURNE. [ACTUAL VARIATIONS OF SMALL MAMMAL POPULATIONS AS REVEALED BY FOOD HABIT STUDIES OF A NOCTURNAL PREDATOR.] Terre & Vie 1964(2): 178-184, 2 figs. Apr.-June 1964. In French. WR 121: 13
A comparison of food habits studies of Tyto alba for 1926-27 and 1959-61.

MAMMALS--PARASITES AND DISEASES

Andrews, Richard D., and Deam H. Ferris. RELATIONSHIPS BETWEEN MOVEMENT PATTERNS OF WILD ANIMALS AND THE DISTRIBUTION OF LEPTOSPIROSIS. J. Wildl. Mgmt. 30(1): 131-134, 1 fig. Jan. 1966. WR 121: 14
[Univ. Ill., Urbana.] Abstract: Trap-retrap data from opossums (Didelphis marsupialis), skunks (Mephitis mephitis), cats (Felis domesticus), and woodchucks (Marmota monax) were analyzed as to home ranges, distribution, and intensity of habitat usage. Each species used some parts of the study area more intensively than others, and in one place these areas of preferred habitat overlapped. It was postulated that contact, direct or indirect, between members of a species as well as between species was potentially greater here and that the distribution of leptospirosis on the area was related to the animal concentrations and the characteristics of the habitat.

Brocklesby, D. W., and Brenda O. Vidler. SOME PARASITES OF EAST AFRICAN WILD ANIMALS. East African Wildl. J. 3: 120-122, 1 fig. Aug. 1965. WR 121: 14
[East African Vet. Res. Organisation, Muguga, P. O. Box 32, Kikuyu, Kenya.] Chart of parasites of 34 spp. of mammals.

Johnson, Harald Norlin. BATS AND RODENTS AS HOSTS OF ARTHROPOD-BORNE (ACARINAL) VIRUSES. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 431-432. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 14
[Viral & Rickettsial Dis. Lab., Calif. State Dept. Public Health, Berkeley.] Abstract only.

Minette, Henri P. INCIDENCE AND SEROTYPE OF LEPTOSPIRAE ISOLATED FROM RODENTS AND MONGOOSES ON THE ISLAND OF HAWAII. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 433. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 14
[Dept. Health, Bur. Lab., State Hawaii, Honolulu.] Abstract only.

Wallace, Gordon D., Bertram Gross, and Robert Lee. LEPTOSPIROSIS SURVEY OF SMALL MAMMALS ON THE ISLAND OF HAWAII. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 435. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 14
[U. S. Public Health Serv., Honolulu, Hawaii.] Abstract only.

SHREWS, MOLES, BATS

Constantine, Denny G. ECOLOGICAL OBSERVATIONS ON LASIURINE BATS IN IOWA. J. Mammal. 47(1): 34-41, 1 fig. Feb. 1966. WR 121: 14
[U. S. Public Health Serv., University Park, N. Mex.] Abstract: During field studies in Iowa in 1960, 1961 and 1963, 253 red bats and hoary bats were discovered in roosts in foliage, and 197 individuals were captured. In late July and early August, many red bat families were breaking up; evidently waves of migrants passed through western Iowa at this time. Females and young red bats found in clusters occurred in a 1:2.2 ratio. Young hoary bats develop to flight stage later than young red bats and initiation of migration is delayed accordingly. Female and young hoary bats occurred together in a 1:2 ratio. Although adult male and female red bats were present in an equal ratio,

no adult male hoary bats were taken. Lasiurine bats occupied "edge" areas of tree growth bordering crops. Bat shelters were on the undersides of vine-infiltrated canopies, lush leafy overhangs or tufts of leaves. Families and solitary young bats roosted at higher elevations than solitary adults. Certain roosts were occupied successively by different bats of the same or dissimilar species. Habitat, shelter and intraspecific and interspecific use of the same roosts are comparable among lasiurine bats occurring in Georgia, California and Iowa.

Coulombe, Harry N., and Benjamin H. Banta. THE DISTRIBUTION AND ECOLOGY OF THE CRAWFORD DESERT SHREW, NOTIOSOREX CRAWFORDI, IN SALINE VALLEY, INYO COUNTY, CALIFORNIA. Wasmann J. Biol. 22(2): 277-297, 5 figs. Fall 1964. WR 121: 15
[Univ. Calif., Los Angeles.] Summary: Thirty-six specimens of Notiosorex crawfordi were obtained in Grapevine Canyon, Nelson Mountains, Inyo County, California, utilizing the buried-can pitfall trapping method. These specimens represented not only the first sample of Notiosorex from the Saline Valley hydrographic basin but also the largest reported sample from any given locality. These records also demonstrate the success of the buried-can pitfall trapping method in obtaining samples of small mammals. The habitats and vertebrate associates reported in the literature are summarized and discussed in relation to the ecological affinities of Notiosorex. The habitats and species of mammals and reptiles obtained in Grapevine Canyon are discussed. Recorded behavioral observations have been examined as possible indicators of metabolic adaptation in relation to water retention in Notiosorex.

Deparama, N. K. [METHODS FOR ESTIMATING THE SIZE OF A MOLE POPULATION.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSR (Moscow). p. 196-208. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 12I208. Transl. of Russian abstr.] WR 121: 15

Gebczyński, Marek. SEASONAL AND AGE CHANGES IN THE METABOLISM AND ACTIVITY OF SOREX ARANEUS LINNAEUS 1758. Acta Theriologica 10(22): 303-331, 6 figs. 30 Nov. 1965. In English with Polish summ. WR 121: 15
[Polish Acad. Sci., Mammals Res. Inst., Białowieża, Poland.]

Girard, Kenneth F., Harold B. Hitchcock, Geoffrey Edsall, and Robert A. MacCready. RABIES IN BATS IN SOUTHERN NEW ENGLAND. New England J. Med. 272 (2): 75-80. 1965. [From Biol. Abstr. 46(18), 1965.] WR 121: 15
[Harvard School Public Health, Boston, Mass.]

Greenhall, Arthur M. NOTES ON BEHAVIOR OF CAPTIVE VAMPIRE BATS. Mammalia 29(4): 441-451, 2 pls. Dec. 1965. In English with French summ. WR 121: 15
[Bird & Mammal Labs., U. S. Natl. Museum, Washington, D. C.] Abstract: The behavior of a breeding colony of captive vampire bats, Desmodus rotundus, was observed for several years in Trinidad. Daily consumption of defibrinated blood averaged from 10 ml to 25 ml per bat. Drinking water was essential. Ectoparasites quickly disappeared from freshly caught bats. Red pelage changed to brownish and grayish within 8 months. A brownish bat dropped into vampire urine turned red in about 24 hours. Bats spent much time in mutual cleaning and preening. Desmodus is promiscuous. Male mounted female dorsally and held female's forearms with thumbs. Courtship and aberrant behavior are described.

Greenhall, Arthur M. ORANGES EATEN BY SPEAR-NOSED BATS. J. Mammal. 47(1): 125. Feb. 1966. WR 121: 15
[Bird & Mammal Labs., U. S. Natl. Museum, Washington, D. C.] "Phyllostomus hastatus hastatus."

Herreid, Clyde F., II, and Richard B. Davis. FLIGHT PATTERNS OF BATS. J. Mammal. 47(1): 78-86, 2 figs. Feb. 1966. WR 121: 16
[Duke Univ., Durham, N. C.] Abstract: The time of the evening emergence and return of Tadarida brasiliensis mexicana is correlated with light conditions. The average emergence time was 11 minutes after sunset. Emergence was earlier on cloudy evenings. A literature search revealed three annual emergence patterns in bats: (1) species without seasonal differences in emergence time in relation to sunset, (2) species which leave relatively later in the spring and fall and (3) species which emerge relatively earlier in the spring and fall. Feeding flights of Tadarida were either diffuse where there was little group integrity or serpentine where the bats flew in a column. Serpentine flights occurred earlier in relation to sunset than did diffuse. The average time away from the cave was 3 hours 48 minutes. Calculations based on measured flow rate and flight duration indicate that all bats in a large population cannot leave the cave each night.

Hitchcock, Harold B. TWENTY-THREE YEARS OF BAT BANDING IN ONTARIO AND QUEBEC. Canadian Field-Nat. 79(1): 4-14, 1 fig. Jan.-Mar. 1965. WR 121: 16
[Middlebury Coll., Middlebury, Vt.]

Konstantinov, A. I. [EFFECT OF THE DEPRIVATION OF VISUAL RECEPTION ON THE CONTROLLED BEHAVIOR OF BATS (CHIROPTERA).] Vestnik Leningr. Univ. Ser. Biol. 3: 72-75, illus. 1964. [From Biol. Abstr. 46(18), 1965. In Russian with English summ.] WR 121: 16

Kristoffersson, R., and Antti Soivio. HIBERNATION IN THE HEDGEHOG (ERINACEUS EUROPAEUS L.): CHANGES OF RESPIRATOR PATTERN, HEART RATE AND BODY TEMPERATURE IN RESPONSE TO GRADUALLY DECREASING OR INCREASING AMBIENT TEMPERATURE. Ann. Acad. Sci. Fennicae, Helsinki, Ser. A, (4 Biol.) 82: 1-17. 1964. [From J. Mammal. 47(1), 1966.] WR 121: 16

Kristoffersson, R., and A. Soivio. HIBERNATION OF THE HEDGEHOG (ERINACEUS EUROPAEUS L.): THE PERIODICITY OF HIBERNATION OF UNDISTURBED ANIMALS DURING THE WINTER IN A CONSTANT AMBIENT TEMPERATURE. Ann. Acad. Sci. Fennicae, Helsinki, Ser. A, (4 Biol.) 80: 1-22. 1964. [From J. Mammal. 47(1), 1966.] WR 121: 16

Kristoffersson, R., and A. Soivio. STUDIES ON THE PERIODICITY OF HIBERNATION IN THE HEDGEHOG (ERINACEUS EUROPAEUS L.). Ann. Zool. Fennici, Helsinki 1: 370-372. 1964. [From J. Mammal. 47(1), 1966.] WR 121: 16

Louch, Charles D., Ajoy Kumar Ghosh, and Bikash C. Pal. SEASONAL CHANGES IN WEIGHT AND REPRODUCTIVE ACTIVITY OF SUNCUS MURINUS IN WEST BENGAL, INDIA. J. Mammal. 47(1): 73-78, 1 fig. Feb. 1966. WR 121: 16
[Lake Forest Coll., Lake Forest, Ill.] Data from this study of the house shrew are compared with data reported from Malaya and Guam.

Osborn, Dale J. HEDGEHOGS AND SHREWS OF TURKEY. Proc. US Natl. Museum 117 (3517): 553-566, 4 figs. 1965. WR 121: 16
[US Naval Med. Res. Unit No. 3, Cairo, Egypt.] With notes on distribution of 9 spp.

Panyutin, K. K. [REPRODUCTION IN THE COMMON NOCTULE.] Uch. Zap. Moskov. Obl. Pedagog. Inst. 126: 63-66. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 19I288. Transl. of Russian abstr.] WR 121: 16

Petter, J. J., and A. Petter-Rousseaux. NOTES BIOLOGIQUES SUR LES CENTETINAE. [BIOLOGICAL NOTES ON THE CENTETINAE.] Terre & Vie 163(1): 66-80, 3 figs. + 2 pls. Jan.-Mar. 1963. In French. WR 121: 16
Insectivora: Tenrecinae; Tenrec, Hemicentetes, Setifer and Echinops.

Phillips, Gary L. ECOLOGY OF THE BIG BROWN BAT (CHIROPTERA: VESPERTILIONIDAE) IN NORTHEASTERN KANSAS. Am. Midland Nat. 75(1): 168-198, 4 figs. Jan. 1966. WR 121: 17

[Univ. Minn., Minneapolis.] Abstract: Study from November, 1962, through May, 1964, principally at Leavenworth, Kansas, of the big brown bat, Eptesicus fuscus, revealed that in a mine 64% of the bats in winter and almost 100% in summer were males. Hibernation began in early October and ended in April. Males hibernated earlier than did females. Hibernation was in cold areas having crevices. Many bats hibernated in clusters of 2-21. Body temperatures of hibernators matched those of the microenvironments. Homing ability was demonstrated by one bat carried 45 miles away. Coleoptera were the principal food. Copulation in autumn and parturition in spring produced, typically, one young per female. In adults, females averaged larger than males. Molt was in spring. Endoparasites and ectoparasites were recorded. Corresponding data on the species from elsewhere in its geographic range are summarized.

Pirlot, Paul. NOTA SOBRE LA ECOLOGÍA DE CIERTOS QUIRÓPTEROS DE LA REGIÓN DEL RÍO PALMAR. [NOTE ON THE ECOLOGY OF CERTAIN CHIROPTERA IN THE RIO PALMAR REGION, VENEZUELA.] Rev. Univ. Zulia Venezuela 8(26): 95-113, illus. 1964. [From Biol. Abstr. 46(21), 1965. In Spanish with English and French summ.] WR 121: 17

[Fac. Cienc., Univ. Montreal, Montreal, Quebec, Canada.]

Pucek, Michalina. WATER CONTENTS AND SEASONAL CHANGES OF THE BRAIN-WEIGHT IN SHREWS. Acta Theriologica 10(24): 353-367, 3 figs. 30 Nov. 1965. In English with Polish summ. WR 121: 17

[Polish Acad. Sci., Mammals Res. Inst., Białowieża, Poland.]

Pucek, Zdzisław. SEASONAL AND AGE CHANGES IN THE WEIGHT OF INTERNAL ORGANS OF SHREWS. Acta Theriologica 10(25): 369-438, 18 figs. 30 Nov. 1965. In English with Polish summ. WR 121: 17

[Polish Acad. Sci., Mammals Res. Inst., Białowieża, Poland.]

Ubelaker, John E. PARASITES OF THE GRAY BAT, MYOTIS GRISESCENS, IN KANSAS. Am. Midland Nat. 75(1): 199-204. Jan. 1966. WR 121: 17

[Colo. State Univ., Fort Collins.]

RABBITS AND PIKAS

Bailey, James A., and Roger J. Siglin. SOME FOOD PREFERENCES OF YOUNG COTTONTAILS. J. Mammal. 47(1): 129-130. Feb. 1966. WR 121: 17

[Ill. Nat. Hist. Surv., Urbana.]

Casteel, David A. NEST BUILDING, PARTURITION, AND COPULATION IN THE COTTONTAIL RABBIT. Am. Midland Nat. 75(1): 160-167, 2 figs. Jan. 1966. WR 121: 17

[Ill. Nat. Hist. Surv., Urbana.] Abstract: Observations of individually marked cottontail rabbits (Sylvilagus floridanus mearnsii) confined in a large enclosure revealed three phases of nest-building activity: excavation, lining with vegetation, and lining with fur. No apparent correlation existed between nest size and litter size in 12 nests. Parturition is described for the first time. Hair from all parts of the body except the abdomen was used to line nests. The postparturient female was serviced by an attendant male soon after leaving the nest; successful copulation chases lasting 10 seconds to 7 minutes were observed. Browsing is thought to be a displacement activity tending to reduce intraspecific strife. A relationship is suggested between nest building and the summer-to-winter molt.

Dean, Paul B., and Antoon de Vos. THE SPREAD AND PRESENT STATUS OF THE EUROPEAN HARE, LEPUS EUROPAEUS HYBRIDUS (DESMAREST), IN NORTH AMERICA. Canadian Field-Nat. 79(1): 38-48, 3 figs. Jan.-Mar. 1965. WR 121: 18
[Ontario Agr. Coll., Guelph, Ontario, Canada.]

Gross, Jack E., and Betty L. Gross. JACKRABBIT HUMERI CLEANED WITH CLOROX. J. Wildl. Mgmt. 30(1): 212, 1 fig. Jan. 1966. WR 121: 18
[Utah State Univ., Logan.] Abstract: Black-tailed jackrabbit (Lepus californicus) humeri of various ages may be thoroughly cleaned of soft tissue for demonstration of epiphyseal cartilage by immersion in commercial Clorox bleach for suitable lengths of time.

Gruzdev, V. V. [WINTER AND SUMMER FEEDING OF THE BROWN HARE IN THE SOUTHERN TRANS-VOLGA TERRITORY.] Zool. Zhur. 43(7): 1089-1093, illus. 1964. [From Biol. Abstr. 46(18), 1965. In Russian with English summ.] WR 121: 18

Hayden, Page. FOOD HABITS OF BLACK-TAILED JACK RABBITS IN SOUTHERN NEVADA. J. Mammal. 47(1): 42-46, 1 fig. Feb. 1966. WR 121: 18
[Northrop Space Labs., Hawthorne, Calif.] Abstract: Forage plants of black-tailed jack rabbits (Lepus californicus deserticola Mearns) at Jackass Flat in southern Nevada were studied by microscopic analysis of stomach contents. It was determined that from spring through early summer the major forage plants are grasses, Oryzopsis, Stipa, Bromus (not native) and annuals. During the period of late summer through winter, the woody perennials, chiefly Larrea, Coleogyne, Krameria and Eurotia are eaten.

Lund, Robert C., and Russell A. Spinks. COTTONTAIL / THE COTTONTAIL RABBIT--ITS LIFE HISTORY, ECOLOGY, AND MANAGEMENT. N. J. Outdoors 16(7): 4-11. Jan. 1966. WR 121: 18
With sections on life and ecology, reproduction, movements, food, cover, mortality, management, stocking, habitat management, cover [management] and harvest of the cottontail in N. J.

Morris, J. A., M. Saglam, and F. M. Bozeman. RECOVERY OF A NEW SYNCYTIUM VIRUS FROM A COTTONTAIL RABBIT. J. Infectious Dis. 115(5): 495-499. Dec. 1965. WR 121: 18
[Natl. Inst. Health, Bethesda, Md.] Summary: A new virus has been isolated from a wild cottontail rabbit. The agent possesses chemical, physical, and biologic properties which suggest its inclusion in the mumps-Newcastle disease-parainfluenza-respiratory syncytial virus complex, but no antigenic relationship was demonstrated in complement fixation and virus neutralization tests with any of a number of other members of this virus group. It is suggested that this agent be tentatively designated rabbit syncytium virus.

Myers, K., and B. S. Parker. A STUDY OF THE BIOLOGY OF THE WILD RABBIT IN CLIMATICALLY DIFFERENT REGIONS IN EASTERN AUSTRALIA. I. PATTERNS OF DISTRIBUTION. CSIRO Wildl. Res. 10(1): 1-32, 11 figs. + 12 pls. Nov. 1965. WR 121: 18
[Div. Wildl. Res., CSIRO, Canberra, Australia.]

Mykytowycz, R., and S. Gambale. A STUDY OF THE INTER-WARREN ACTIVITIES AND DISPERSAL OF WILD RABBITS, ORYCTOLAGUS CUNICULUS (L.), LIVING IN A 45-AC PADDOCK. CSIRO Wildl. Res. 10(1): 111-123, 4 figs. Nov. 1965. WR 121: 18
[Div. Wildl. Res., CSIRO, Canberra, Australia.]

Rongstad, Orrin J. A COTTONTAIL RABBIT LENS-GROWTH CURVE FROM SOUTHERN WISCONSIN. J. Wildl. Mgmt. 30(1): 114-121, 3 figs. Jan. 1966. WR 121: 18
[Minn. Museum Nat. Hist., Univ. Minn., Minneapolis.] Abstract: A lens-growth curve, with confidence limits, was established from 188 known-age, pen-reared cottontail rabbits (Sylvilagus floridanus) between 2 and 297 days old. Excessive variation in lens weights for any given age-class made it unlikely that year classes, other than young-of-the-year from adults, could be separated.

Pen-reared cottontails from southern Wisconsin had heavier lenses and heavier body weights than those from central Illinois, at least up to 150 days old. After death, lens-weight loss due to decomposition increased with temperature. Greatest weight loss occurred during alternate freezing and thawing. At least 12 days were needed to dry lenses in a gravity convection oven.

Stodart, Eleanor. A STUDY OF THE BIOLOGY OF THE WILD RABBIT IN CLIMATICALLY DIFFERENT REGIONS IN EASTERN AUSTRALIA. II. SEASONAL CHANGES IN THE PELT. CSIRO Wildl. Res. 10(1): 33-72, 15 figs. + 2 pls. Nov. 1965. WR 121: 19
[Div. Wildl. Res., CSIRO, Canberra, Australia.]

Stodart, Eleanor. A STUDY OF THE BIOLOGY OF THE WILD RABBIT IN CLIMATICALLY DIFFERENT REGIONS IN EASTERN AUSTRALIA. III. SOME DATA ON THE EVOLUTION OF COAT COLOUR. CSIRO Wildl. Res. 10(1): 73-82, 2 figs. Nov. 1965. WR 121: 19
[Div. Wildl. Res., CSIRO, Canberra, Australia.]

RODENTS--MISCELLANEOUS

Brower, James E., and Tom J. Cade. ECOLOGY AND PHYSIOLOGY OF NAPAEOZAPUS INSIGNIS (MILLER) AND OTHER WOODLAND MICE. Ecology 47(1): 46-63, 10 figs. Winter 1966. WR 121: 19
[Syracuse Univ., Syracuse, N. Y.] Woodland jumping mice have no preference for habitats near water, but shrubby ground cover is required and often occurs near water. Woodland jumping mice were found in nonwooded areas; in one nonwooded but shrubby area removal of the woodland jumping mouse population was followed by establishment of a population of meadow jumping mice (Zapus hudsonius). Woodland jumping mice and red-backed voles (Clethrionomys gapperi) seldom occurred together. Woodland jumping mice were more active on cold than warm nights. The rate of evaporation was lower in woodland jumping mice than in sympatric Peromyscus maniculatus and was closer to values found for mice from drier climates. Jumping mice in the summer had a more precise thermoregulation over a wide range of ambient temperatures than had deer mice.--From abstr.

Calder, Dale R., and J. Sherman Bleakney. MICROARTHROPOD ECOLOGY OF A PORCUPINE-INHABITED CAVE IN NOVA SCOTIA. Ecology 46(6): 895-899, 4 figs. Autumn 1965. WR 121: 19
[Va. Inst. Marine Sci., Gloucester Point.]

Christian, John J., and David E. Davis. ADRENAL GLANDS IN FEMALE VOLES (MICROTUS PENNSYLVANICUS) AS RELATED TO REPRODUCTION AND POPULATION SIZE. J. Mammal. 47(1): 1-18, 8 figs. Feb. 1966. WR 121: 19
[Div. Endocrinology, Albert Einstein Med. Center, Philadelphia, Pa.]
Abstract: Weights were obtained and histological examinations made of the adrenal glands and reproductive organs of 193 female Microtus pennsylvanicus trapped on the grasslands of the Letterkenny Army Ordnance Depot in south central Pennsylvania. The relationships between adrenal weight and histology and reproductive status and population size were examined. Adrenal weight increased sharply at sexual maturity but there were no further changes in adrenal weight relative to body weight with changes in reproductive status once maturity was reached. It also was concluded that the inner juxtamedullary portion of the adrenal cortex of female voles is inner-fasciculata-reticularis and not an X-zone and that the adrenal hypertrophy at maturation is probably due to increased secretion of estrogens. There was marked and significant parallelism between mean adrenal weights and population size for mature females; but less so for immature females. Changes in adrenal weight, particularly in the mature females, were attributed to changes in population size and not to reproductive status or directly to seasonal environmental changes.

Fairley, J. S. THE FIELDMOUSE ON SOME IRISH ISLANDS. Irish Nat. J. 14(12): 309-311. 1964. [From Biol. Abstr. 46(16), 1965.] WR 121: 20
[Dept. Zool., Queen's Univ., Belfast, N. Ireland.] "Apodemus sylvaticus."

Fenyuk, B. K., B. N. Pastukhov, and N. M. Semenov. [THE ORGANIZATION AND METHODOLOGICAL PRINCIPLES FOR DETERMINING RODENT POPULATION SIZES BY PLAGUE PREVENTION INSTITUTES.] In: (The organization and counting methods for birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 152-158. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 12I209. Transl. of Russian abstr.] WR 121: 20

Fisler, George F. HOMING IN THE WESTERN HARVEST MOUSE, REITHRODONTOMYS MEGALOTIS. J. Mammal. 47(1): 53-58. Feb. 1966. WR 121: 20
[San Fernando State Coll., Northridge, Calif.] Abstract: The homing ability of the western harvest mouse was investigated in a grassland area in Monterey County, California, during two summer seasons. Mice were removed from their home areas to release sites 320 to 1,000 feet away. Homing success diminished with distance displaced. Displaced mice returned quickly. Trapping at certain release stations revealed displaced mice and resident mice living side by side. Presumed homing of harvest mice in this study was accomplished only from short distances and probably through nonrandom movements over known terrain.

Goertz, John W. INCIDENCE OF WARBLES IN SOME OKLAHOMA RODENTS. Am. Midland Nat. 75(1): 242-245. Jan. 1966. WR 121: 20
[La. Polytech. Inst., Ruston.]

Golvan, Yves J., and Jean A. Rioux. LA PESTE, FACTEUR DE REGULATION DES POPULATIONS DE MERIONS AU KURDISTAN IRANIEN. [THE PLAGUE, REGULATION FACTOR OF MERIONES OF IRANIAN KURDISTAN.] Terre & Vie 1963(1): 3-34, [6] figs. + 2 pls. Jan.-Mar. 1963. In French. WR 121: 20
[Faculté Méd. Paris, Paris, France.] Meriones vinogradovi and M. tristrami are sensitive and M. persicus and M. libycus are resistant to plague.

Haitlinger, Ryszard. MORPHOLOGICAL ANALYSIS OF THE WROCŁAW POPULATION OF CLETHRIONOMYS GLAREOLUS (SCHREBER, 1780). Acta Theriologica 10(18): 243-272, 5 figs. 30 Nov. 1965. In English with Polish summ. WR 121: 20
[Coll. Agr., Cybulskiego 20, Wrocław, Poland.]

Haresign, Thomas W. A STUDY OF THE ACTIVITY OF PEROMYSCUS LEUCOPUS AS INFLUENCED BY CERTAIN ENVIRONMENTAL FACTORS. Ph.D. thesis, Univ. Mass. 86 p. 1964. [From Dissertation Abstr. 26(6), 1965.] WR 121: 20

Hayward, John Stanley. ASPECTS OF TEMPERATURE ADAPTATION IN PEROMYSCUS. Ph.D. thesis, Univ. British Columbia. 141 p. 1964. [From Dissertation Abstr. 26(8), 1966. WR 121: 20
Six races of Peromyscus, from a variety of habitats, have been studied with respect to factors involved in adaptation to environmental temperature. The central theme of the study was to assess the extent to which metabolic rate is involved in the processes of distribution and speciation in this genus. A unique, electrolytic respirometer for the accurate measurement of oxygen consumption was constructed and reported in the literature. It is shown that the major temperature-adaptive feature of these small mammals is the use of a suitable microclimate. Measurements of the ambient temperatures prevailing in the microhabitats of the six races during winter and summer are presented. These data indicate that there is no significant differential selective pressure for temperature adaptation among the six races, and are complementary to the finding that metabolic rate is inadaptive to gross climate in Peromyscus.

Ismagilov, M. I. [THE GEOGRAPHICAL DISTRIBUTION OF DOMINANT RODENT SPECIES IN THE BETPAK-DALA DESERT.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 63(2): 61-69. 1958. [From Biol. Abstr. 46(21), 1965, from Referat., Zhur., Biol., 1959, no. 35276. Transl. of Russian abstr. Original with English summ.] WR 121: 21

Levi, W. I., and others. SIGNIFICANCE OF SEROLOGICAL METHODS IN THE EPIZOOTOLOGICAL STUDY OF PLAGUE IN WILD RODENTS. J. Hyg. Epidemiol. Microbiol. 8(4): 422-427, illus., map. 1964. [From Biol. Abstr. 46(17), 1965. In English with French, German, and Spanish summ.] WR 121: 21
[Inst. Sci. Res., Rostov, USSR.]

Martirosyan, B. A. [BIOLOGY OF THE MULTIPLICATION OF THE SNOW VOLE (MICROTUS NIVALIS) IN ARMENIAN SSR.] Zool. Zhur. 43(10): 1552-1556, illus. 1964. [From Biol. Abstr. 46(16), 1965. In Russian with English summ.] WR 121: 21
[Zool. Inst., Acad. Sci. Armenian SSR, Erevan, Armenian SSR.]

Nos De Nicolau, Rosario. ROEDORES QUE VIVEN EN AMERICA DEL SUR. [RODENTS THAT LIVE IN SOUTH AMERICA.] Mens. Boletin Inform. Fed. Iberoamer. Parques Zool. 3: 23-26, illus. 1964. [From Biol. Abstr. 46(17), 1965. In Spanish.] WR 121: 21
[Nat. Parque Zool., Barcelona, Spain.]

Payne, Jerry A., and G. E. Cosgrove. TISSUE CHANGES FOLLOWING CUTEREBRA INFESTATION IN RODENTS. Am. Midland Nat. 75(1): 205-213, 19 figs. Jan. 1966. WR 121: 21
[Oak Ridge Natl. Lab., Oak Ridge, Tenn.] "Peromyscus leucopus."

Pearson, O. P. THE PREY OF CARNIVORES DURING ONE CYCLE OF MOUSE ABUNDANCE. J. Animal Ecol. 35(1): 217-233, 9 figs. Feb. 1966. WR 121: 21
[Univ. Calif., Berkeley.] Compared with Reithrodontomys, the only other abundant rodent, Microtus were eaten in disproportionately large numbers. When Microtus became scarce, the carnivores ate more gophers, rabbits, and woodrats. Instead of relieving pressure on the meadow mice, the presence of these alternative prey species enable the carnivores to survive longer on the area and reduce Microtus to extremely low densities. On the basis of the thoroughness and the timing of carnivore predation, and on the absence of cycles in an island population of Microtus free from carnivores, it is postulated that carnivore predation is an essential part of the regular cycles of abundance of lemmings, Microtus and other microtines.--From summ.

Peshkov, B. I. [THE BIOTOPES AND FEEDING HABITS OF THE WATER VOLE (ARVICOLA TERRESTRIS) IN THE FLOODPLAIN OF THE LENA RIVER.] Izv. Irkutskogo Nauch.-Issled. Protivochumnogo Inst. Sibiri Dal'nego Vost. 25: 215-219. 1963. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1964, no. 14I240. Transl. of Russian abstr.] WR 121: 21

Petersen, Erich. BIOLOGISCHE BEOBACHTUNGEN ÜBER VERHALTENSWEISEN EINIGER EINHEIMISCHER NAGER BEIM ÖFFNEN VON NÜSSEN UND KERNEN. [BIOLOGICAL OBSERVATIONS ON THE INDICATIONS OF BEHAVIOR OF SOME NATIVE RODENTS BY THEIR OPENING OF NUTS AND KERNELS.] Z. Säugetierk. 30(3): 156-162. May 1965. [From J. Mammal. 47(1), 1966. In German.] WR 121: 21

Pinter, A. J., and N. C. Negus. EFFECTS OF NUTRITION AND PHOTOPERIOD ON REPRODUCTIVE PHYSIOLOGY OF MICROTUS MONTANUS. Am. J. Physiol. 208(4): 633-638. April 1965. [From J. Mammal. 47(1), 1966.] WR 121: 21

Rahmann, H., Th. Kock, and M. Rahmann. BEOBACHTUNGEN ZUM MITTEL-SKANDINAVISCHEN LEMMINGVORKOMMEN IM HERBST 1963. [OBSERVATIONS UPON THE MIDDLE SCANDINAVIAN LEMMING MIGRATION OF AUTUMN 1963.] Säugetierk. Mitteil. 13(1): 22-25. 1 Apr. 1965. [From J. Mammal. 47(1), 1966. In German.] WR 121: 21

Ressler, Robert H., and William D. Haasch. SOCIAL STIMULATION AND THE SURVIVAL OF MICE UNDER PROLONGED WATER DEPRIVATION. Ecology 46(5): 734-735. Late summer 1965. WR 121: 22
[Univ. Wis., Milwaukee.]

Richter, H[elmut]. ZUR VERBREITUNG DER BRANDMAUS, APODEMUS AGRARIUS (PALLAS, 1771), IM MITTLEREN EUROPA. [ON THE DISTRIBUTION OF APODEMUS AGRARIUS IN CENTRAL EUROPE.] Z. Säugetierk. 30(3): 181-185. May 1965. [From J. Mammal. 47(1), 1966. In German.] WR 121: 22

Ropartz, Ph. ETUDE DYNAMIQUE DU TERRIER DU HAMSTER DORE. [DYNAMIC STUDY OF THE BURROW OF MESOCRICETUS AURATUS.] Terre & Vie 1962(4): 428-441, 10 figs. Oct.-Dec. 1962. In French. WR 121: 22

Sheppe, Walter. CHARACTERISTICS AND USES OF PEROMYSCUS TRACKING DATA. Ecology 46(5): 630-634, 2 figs. Late summer 1965. WR 121: 22
[Calif. Acad. Sci., San Francisco.] Abstract: Movements of island populations of deer mice were studied by smoked paper tracking supplemented by live trapping. Some mice tracked regularly, others rarely. Some stations were tracked much more than others. The number of track records per night varied greatly, being much greater immediately after trapping than at other times. Tracking was increased when novel track shelters were substituted for familiar ones. Use of shelters is a form of exploratory behavior that occurs most often when the shelters present stimuli strong enough to elicit exploration but not strong enough to repel the mouse. Tracking also was increased when bait was placed in the shelters. The tracking method produces more data than trapping and interferes less with the movements of the mice. However, it has a greater probability of error, produces more variable results, and does not provide data on the condition of the mice.

Shvarts, S. S., V. G. Ishchenko, N. A. Ovchinnikova, V. G. Olenev, A. V. Pokrovskii, and O. A. Pyastolova. [ALTERATION OF GENERATIONS AND LIFE SPAN OF RODENTS.] Zhur. Obshch. Biol. 25(6): 417-433, illus. 1964. [From Biol. Abstr. 46(16), 1965. In Russian with English summ.] WR 121: 22
[Inst. Biol., Urals Br. Acad. Sci. USSR, Sverdlovsk, USSR.] The study of the complex of biological indicators of dominant species rodents (Microtus gregalis, M. oeconomus, M. middendorffi, M. arvalis, L. lagurus, Apodemus agrarius, etc.) under experimental and natural conditions shows essential differences between seasonal generations of various spp.

Smirin, Yu. M. [POPULATION DYNAMICS OF MURIDAE IN DIFFERENT TYPES OF FORESTS NEAR MOSCOW.] Zool. Zhur. 43(10): 1544-1551, illus. 1964. [From Biol. Abstr. 46(16), 1965. In Russian with English summ.] WR 121: 22
[Moscow State Univ., Moscow, USSR.]

Smith, C. Cameron. AGEING CRITERIA IN THE SPRING HARE, PEDETES CAPENSIS FORSTER. Arnoldia 1(26): 1-6, 3 [figs.]. 17 Feb. 1965. WR 121: 22
[Univ. Coll. Rhodesia & Nyasaland, Salisbury, Rhodesia.] The most accurate aging criteria are the weights of bacula and eye lenses. Wet and dry weights of lenses appear equally valid, but ease of determination favors the former. Water content of lenses decreases with age.--From summ.

Spencer, Donald A. PORCUPINE POPULATION FLUCTUATIONS IN PAST CENTURIES REVEALED BY DENDROCHRONOLOGY. J. Appl. Ecol. 1(1): 127-149, 5 figs. + 4 pls. May 1964. WR 121: 22
[USDA, Agr. Res. Serv., Washington, D. C.] The dendrochronological technique described was used in an investigation of porcupine abundance over the past centuries on Mesa Verde has shown that there were four periods in the last 120 years when population eruptions took place. These four periods of relative abundance center in the years 1845, 1885, 1905 and 1935. The 1905 eruption covered a period of approximately 12 years while the other three were each approximately 20 years in duration. Furthermore, the 1905 eruption was of minor intensity as compared with that of 1885, and the latter may have equalled the recent 1936 eruption.--From summ.

Straka, F. [BIOLOGY OF THE LESSER MOLE RAT (SPALAX LEUCODON) IN BULGARIA.] Zool. Zhur. 43(10): 1539-1543. 1964. [From Biol. Abstr. 46(16), 1965. In Bulgarian with German summ.] WR 121: 23
[Inst. Plant Protect., Sofia, Bulgaria.]

Tanaka, Ryo. ECOLOGY OF RODENT HOSTS OF THE SCRUB TYPHUS VECTOR IN THE SHIKOKU DISTRICT OF JAPAN. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 434. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 23
[Kochi Women's Univ., Kochi, Japan.] Abstract only.

Tanaka, Ryo. POPULATION DYNAMICS OF THE SMITH'S RED-BACKED VOLE IN HIGHLANDS OF SHIKOKU. Res. Population Ecol. 1964(6): 54-66, 3 figs. Dec. 1964. In English with Japanese summ. WR 121: 23
[Kochi Women's Univ., Kochi, Japan.] "Eothenomys smithi."

Terman, C. Richard. A STUDY OF POPULATION GROWTH AND CONTROL EXHIBITED IN THE LABORATORY BY PRAIRIE DEERMICE. Ecology 46(6): 890-895, 3 figs. Autumn 1965. WR 121: 23
[Coll. William & Mary, Williamsburg, Va.] In laboratory populations of Peromyscus maniculatus bairdii supplied with surplus food, numbers ceased to increase at different numerical levels though under similar conditions of the physical environment. Control of population growth was attained by cessation of reproduction or mortality of young.--From abstr.

Trojan, Przemysław. INTRAPOPULATION RELATIONS AND REGULATION OF NUMBERS IN SMALL FOREST RODENTS. Ekologia Polska--Ser. A 13(11): 143-168, 7 figs. 1965. In English with Polish summ. WR 121: 23
[Res. Sta. Polish Acad. Sci., Turew, Koscian, Poland.] Abstract: The relations between resident and migrating individuals were examined in respect of three species of small rodents. In the case of Apodemus agrarius (Pall.) these relations are tolerant, whereas in the case of Apodemus flavicollis (Melch.) the migrants are energetically repelled by the resident individuals. In the case of Clethrionomys glareolus (Schreb.) relations between the two categories of rodents become antagonistic with increasing occupation of the area by the resident individuals. The connections between resident and migrating rodents form the intrapopulation mechanism regulating numbers, the action of which depends on the intensity of antagonistic relations, the density of the resident part of the population and the degree of its residency. With A. agrarius the regulation of numbers is weakest, with C. glareolus, the strongest, while with A. flavicollis it is intermediate in degree between the first two species.

Turček, F. EINIGE ANGABEN ZUR NAHRUNG DER FELDMAUS (MICROTUS ARVALIS). [SOME INFORMATION ON THE FEEDING OF THE FIELD MOUSE (MICROTUS ARVALIS).] Säugetierk. Mitteil. 13(1): 30-32. 1 Apr. 1965. [From J. Mammal. 47(1), 1966. In German.] WR 121: 23

Vaughan, Terry A. FOOD-HANDLING AND GROOMING BEHAVIORS IN THE PLAINS POCKET GOPHER. J. Mammal. 47(1): 132-133, 1 fig. Feb. 1966. WR 121: 23
[Colo. State Univ., Fort Collins.]

Warnock, John E. THE EFFECTS OF CROWDING ON THE SURVIVAL OF MEADOW VOLES (MICROTUS PENNSYLVANICUS) DEPRIVED OF COVER AND WATER. Ecology 46(5): 649-664, 16 figs. Late summer 1965. WR 121: 23
[Western Ill. Univ., Macomb.] In animals supplied with adequate cover, crowding induced hypertrophy of the spleen and of the female adrenal but had no adverse effect on wounding or survival. In the absence of cover much fighting and mortality was associated with crowding, particularly among the males. The ill effects of crowding disappeared soon after animals were removed from the crowded situation. Crowded animals autopsied had slightly enlarged adrenals and greatly enlarged spleens as compared with animals not crowded. The thymus was not affected by crowding. All animals deprived of water showed adrenal

hypertrophy, splenic and thymic atrophy and loss in body weight. Adrenal, thymus, and spleen weights and the amount of wounding in males varied in relation to social rank and appeared closely related to the stability of a social hierarchy.--From abstr.

Whitaker, John O., Jr. CLITORIS BONES OF ZAPUS HUDSONIUS AND NAPAEOZAPUS INSIGNIS. J. Mammal. 47(1): 127. Feb. 1966. WR 121: 24
[Indiana State Univ., Terre Haute.]

Wiegert, Richard G., and James C. Mayenschein. DISTRIBUTION AND TRAP RESPONSE OF A SMALL WILD POPULATION OF COTTON RATS (SIGMODON H. HISPIDUS). J. Mammal. 47(1): 118-120. Feb. 1966. WR 121: 24
[Savannah River Ecol. Lab., P. O. Box A, SROO, Aiken, S. C.]

Williams, R. G., J. L. Carmon, and F. B. Golley. EFFECT OF SEQUENCE OF PREGNANCY ON LITTER SIZE AND GROWTH IN PEROMYSCUS POLIONOTUS. J. Reprod. Fertil. 9(2): 257-260. 1965. [From Biol. Abstr. 46(15), 1965.] WR 121: 24
[Univ. Ga., Athens.] An analysis of 143 litters of Peromyscus polionotus showed that litter size increased by 0.30 mice/litter up to the 4th pregnancy. After the 4th litter, litter size increased at a lesser rate to the 6th pregnancy. Growth followed the same general pattern as did litter size. The effect of order of litter was significant for weights up to 28 days of age. In general, average weight of mice increased up to the 6th pregnancy and then decreased.

Zonov, G. B., and L. D. Tugutov. [WINTER OBSERVATIONS OF WATER VOLES (ARVICOLA) IN YAKUTIYA.] Doklady Irkutskogo Protivochumnogo Inst. 6: 88-91. 1963. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1964, no. 14I241. Transl. of Russian abstr.] WR 121: 24

RATTUS AND MUS

DeLong, Karl Thomas. POPULATION ECOLOGY OF THE FERAL HOUSE MOUSE. Ph.D. thesis, Univ. Calif. (Berkeley). 91 p. 1965. [From Dissertation Abstr. 26 (7), 1966.] WR 121: 24

Lidicker, William Z., Jr. ECOLOGICAL OBSERVATIONS ON A FERAL HOUSE MOUSE POPULATION DECLINING TO EXTINCTION. Ecol. Monographs 36(1): 27-50, 17 figs. Winter 1966. WR 121: 24
[Univ. Calif., Berkeley.] During 14 months of observations the feral house mouse (Mus musculus) population on a 55-acre island decreased from about 300 per acre to extinction. Associated with the population decline was a rapid die-off in the fall of 1958, slow but steady mortality through the winter and spring of 1959, almost complete failure of reproduction during a markedly restricted breeding season, and a final rapid decline in the fall of 1959. There was a rapid expansion of the population of Microtus californicus coincident with the decline of the house mouse population, suggesting the possibility of competition between the two species. Adrenal, thymus and body weights and kidney fat did not correlate with population density but appeared to correlate with inclement winter weather.

Serafiński, Włodzimierz. THE SUBSPECIFIC DIFFERENTIATION OF THE CENTRAL EUROPEAN HOUSE MOUSE (MUS MUSCULUS L.) IN THE LIGHT OF THEIR ECOLOGY AND MORPHOLOGY. Ekologia Polska--Ser. A 13(17): 305-348, 1 fig. 1965. In English with Polish summ. WR 121: 24
Abstract: The distribution of subspecies of house mice in Central Europe is presented in relation to geobotanical regions. It was found that biological and ecological characters are more suitable for distinguishing subspecies than morphological ones, and that the occurrence of subspecies is connected primarily with defined ecological habitats, hence in the case of house mice, and probably also other synanthrophic animals, the subspecies is an ecological, and not a geographical race. Three ecological races and one transitional form, differing from each other as to their degree of synanthropisation, way of life and connections with the habitat, were found to occur in Central Europe.

Thiessen, D. D. THE RELATION OF SOCIAL POSITION AND WOUNDING TO EXPLORATORY BEHAVIOR AND ORGAN WEIGHTS IN HOUSE MICE. J. Mammal. 47(1): 28-34, 2 figs. Feb. 1966. WR 121: 25
[Univ. Texas, Austin.]

Tigner, J. R. CHEMICALLY TREATED MULTIWALL TARPS AND BAGS TESTED FOR RAT REPELLENCY. J. Wildl. Mgmt. 30(1): 180-184. Jan. 1966. WR 121: 25
[Denver Wildl. Res. Center, Denver, Colo.] Abstract: Three-ply multiwall (polyethylene, tributyltin-acetate-treated muslin, polyethylene) tarps and bags were tested to determine their resistance to Norway rats (Rattus norvegicus). Tarps having the mid-ply treated with two concentrations of tributyltin acetate (TBTA) (4.5 and 7.5 mg per square inch) were significantly better at the 5 percent level than the untreated tarps. However, there was sufficient damage on the 7.5 mg per square inch tarps to indicate that for long-term use a more active repellent would be necessary.

SCIURIDS

Abramov, V. K. [CAUSES FOR THE REDUCTION IN THE SQUIRREL POPULATION SIZE IN THE PRIMORE'E (USSR).] Trudy Sikhote-Alinskogo Gos. Zapovednika 3: 313-316. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I283. Transl. of Russian abstr.] WR 121: 25

Artem'ev, Yu. T. [THE PROBLEM OF THE DISTRIBUTION OF A SPECIES WITHIN A RANGE ON THE EXAMPLE OF THE RED-CHEEKED AND LITTLE SUSLIKS (CITELLUS MAJOR AND C. PYGMAEUS).] In: (Natural resources of the Volga-Kama Region. Animal world.) Nauka (Moscow). p. 53-59. 1964. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 23I246. Transl. of Russian abstr.] WR 121: 25

Bibikov, D. I. [THE RANGE AND STOCKS OF MARMOTS, IN KAZAKHSTAN AND CENTRAL ASIA.] In: (Zoogeography of the land.) (Tashkent). p. 30-31. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 14I233. In Russian.] WR 121: 25

Carleton, William M. FOOD HABITS OF TWO SYMPATRIC COLORADO SCIURIDS. J. Mammal. 47(1): 91-103, 4 figs. Feb. 1966. WR 121: 25
[Yale Univ., New Haven, Conn.] Abstract: The golden-mantled ground squirrel (Citellus lateralis lateralis) and the least chipmunk (Eutamias minimus consobrinus) were studied in the mountains of west central Colorado where the two species are sympatric and display marked similarities in habitat selection, life cycles and general behavior patterns. Detailed investigation of the energy relationships and food habits of these animals, including field observations, stomach-content analyses and food preference tests, demonstrated a slight divergence in general food preferences and a profound dependence by both species upon the common dandelion (Taraxacum officinale) for summer food. This plant provided more than 80% of the June-August diet of both chipmunk and mantled squirrel. The chipmunk preferred and consumed the flowers, seeds, and seed-laden heads of the dandelion, while the mantled squirrel preferred the stems and rarely ate the heads or seeds. These behavior patterns effectively removed, in part, the two sciurids from direct competition for energy sources in summer although their foraging territories greatly overlapped.

Donohoe, Robert W. SQUIRREL HARVEST AND POPULATION STUDIES IN OHIO. Game Res. Ohio 3: 65-93, 17 figs. July 1965. WR 121: 25
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] A detailed analysis of the statewide harvest and findings from 4 Ohio study areas of fox squirrel and gray squirrel for the period 1958-1961. Additional information on squirrel movement and longevity was collected through Feb. 1961.--From abstr.

Fellenberg, W. O. GEBÄUDENESTER DES EICHHÖRNCHENS (SCIURUS VULGARIS) IN WESTFALEN. [NESTS OF THE EUROPEAN RED SQUIRREL (SCIURUS VULGARIS) IN WESTPHALIA.] Bonner Zool. Beiträge 15(1-2): 72-77. 15 July 1964. [From J. Mammal. 47(1), 1966. In German.] WR 121: 26

Forbes, Richard B. NOTES ON A LITTER OF LEAST CHIPMUNKS. J. Mammal. 47(1): 159-161. Feb. 1966. WR 121: 26
[Portland State Coll., Portland, Oreg.] Detailed notes on the development of a litter of 5 Eutamias minimus.

Jaroslow, B. N., and D. E. Smith. EFFECTS OF HIBERNATION ON THE LATENT PERIOD IN NORMAL AND X-IRRADIATED GROUND SQUIRRELS. J. Immunol. 93(4): 649-655. Oct. 1964. [From J. Mammal. 47(1), 1966.] WR 121: 26

Merriam, H. Gray. TEMPORAL DISTRIBUTION OF WOODCHUCK INTERBURROW MOVEMENTS. J. Mammal. 47(1): 103-110, 2 figs. Feb. 1966. WR 121: 26
[Univ. Texas, Austin.] Abstract: A telemetrically recorded temporal distribution of 223 interburrow movements by woodchucks, Marmota monax rufescens, is described and compared with general activity records for two other marmot populations. Frequency of interburrow movements was low following morning emergence, declined less than total activity at midday, and continued later in the evening than all activity in the other two populations. Behavioral variation of observation efficiency could cause some of these differences but this is not demonstrated. A relationship between agonistic behavior and interburrow movements is suggested.

Mohr, Carl O. HOME AREA AND COMPARATIVE BIOMASS OF THE NORTH AMERICAN RED SQUIRREL. Canadian Field-Nat. 79(3): 162-171, 3 figs. July-Aug. 1965. WR 121: 26
[Univ. Calif., Berkeley.] Relatively narrow home ranges are indicated. Comparisons are made between the composite method of determining home area and the minimum home range (convex polygonal) method.

Nadler, Charles F., and Charles E. Hughes. CHROMOSOMES AND TAXONOMY OF THE GROUND SQUIRREL SUBGENUS ICTIDOMYS. J. Mammal. 47(1): 46-53, 5 figs. Feb. 1966. WR 121: 26
[Northwestern Univ. Med. School, Chicago, Ill.]

Nixon, Charles M. PRODUCTIVITY RATES OF GRAY AND FOX SQUIRRELS IN OHIO. Game Res. Ohio 3: 93-106, 2 figs. July 1965. WR 121: 26
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Abstract: Reproductive data from gray squirrels (Sciurus carolinensis) and fox squirrels (Sciurus niger) were collected statewide, and more intensively in three study areas, 1958-1962. Regional sampling of age ratios derived from gun harvests showed productivity rates to vary from year to year even within the same area. Chi-square tests of homogeneity for regional adult female:immature ratios revealed a significantly higher reproductive rate for the western counties. Fox squirrels produced larger litters than gray squirrels in all regions. Litter sizes approximated those reported for the eastern United States. Spring and summer litter sizes were nearly equal. Parturition and breeding dates were calculated from one area in southeastern Ohio for 1959 and 1960. Analysis of hunting results from three study areas suggests that immature squirrels born after June 1 are not being fully utilized during each hunting season. Fewer than 6 percent of the immature females conceived when less than 8 months old.

Orlova, A. P. [SOME FEATURES OF THE LIFE CYCLE OF THE MOUNTAIN FORM OF THE LITTLE SUSLIK (CITELLUS PYGMAEUS MUSICUS) AS COMPARED TO THE PLAINS (C. P. PYGMAEUS).] Uch. Zap. Leningr. Gos. Pedagog. Inst. Im. A. I. Gertsena 230: 289-311. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 23I267. Transl. of Russian abstr.] WR 121: 26

SCIURIDS--Continued

Pengelley, Eric T., and Kenneth C. Fisher. LOCOMOTOR ACTIVITY PATTERNS AND THEIR RELATION TO HIBERNATION IN THE GOLDEN-MANTLED GROUND SQUIRREL. J. Mammal. 47(1): 63-73, 4 figs. Feb. 1966. WR 121: 27

[Univ. Calif., Riverside.] Abstract: The locomotor activity of the golden-mantled ground squirrel, Citellus lateralis, under controlled environmental temperatures and photoperiods was studied for nearly 2 years. Animals with access to an activity wheel, in comparison to controls, may not hibernate at all. They show a rise of locomotor activity producing a spring peak and a gradual decline to a winter minimum. This gradual decline takes place regardless of the photoperiod and environmental temperature. However, if the environmental temperature is cold (32° F) during spring and summer, the animals' net activity is increased. This delays the onset of hibernation sometimes indefinitely. A warm (70° F) environment decreases net activity during spring and summer, and apparently speeds the internal preparations for hibernation. Thus, the environment may be manipulated so that hibernators become potential "aestivators."

Smith, Christopher Carlisle. INTERSPECIFIC COMPETITION IN THE GENUS OF TREE SQUIRRELS TAMIASCIURUS. Ph.D. thesis, Univ. Wash. 306 p. 1965. [From Dissertation Abstr. 26(8), 1966.] WR 121: 27

A field study of competitive interactions between the red squirrel (Tamiasciurus hudsonicus) and the Douglas squirrel (T. douglasii) was performed in the area where their ranges overlap in southwestern British Columbia. Data on social organization, predation, food, daily activity patterns, and physical differences between the species are presented.

Surdacki, Stanisław. ROZMIESZCZENIE I ZMIENNOŚĆ SUSŁA MOREGOWANEGO, CITELLUS CITELLUS (LINNAEUS, 1766) W POLSCE. [DISTRIBUTION AND VARIABILITY OF THE EUROPEAN SOUSLIK, CITELLUS CITELLUS (LINNAEUS, 1766) IN POLAND.] Acta Theriologica 10(19): 273-288, 4 figs. 30 Nov. 1965. In Polish with English summ. WR 121: 27

[Polish Acad. Sci., Mammals Res. Inst., Białowieża, Poland.]

BEAVER

Allen, Kenneth E. IMMOBILIZING BEAVER WITH SUCCINYLCHOLINE CHLORIDE. Game Res. Ohio 3: 215-220, 1 fig. July 1965. WR 121: 27

[Ohio Div. Wildl., P. O. Box 2751, Firestone Park Sta., Akron.] Abstract: In 16 tests with live trapped beaver (Castor canadensis), Sucostrin Chloride showed promise as an immobilizing drug to facilitate sexing. Best results were obtained with dosages of 0.211-0.236 mg/pound of body weight.

Blanchet, Maurice. CASTORS ET BARRAGES HYDRO-ELECTRIQUES. [BEAVER AND HYDRO-ELECTRIC DAMS.] Terre & Vie 1961(4): 436-439, 1 pl. Oct.-Dec. 1961. In French. WR 121: 27

Borisov, A. V. [GAME ANIMALS OF OMSK OBLAST.] Izv. Omskogo Otd. Geogr. Obshchest. SSSR 5(12): 161-173. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I320. Transl. of Russian abstr.] WR 121: 27

"Beaver."

Richard, P. B. DETERMINATION DU SEXE DU CASTOR VIVANT (CASTOR FIBER). [SEX DETERMINATION OF LIVE BEAVER (CASTOR FIBER).] Terre & Vie 1962(3): 252-256, 5 figs. July-Sept. 1962. In French. WR 121: 27

Zaniewski, Leon. SEX DETERMINATION IN THE EUROPEAN BEAVER, CASTOR FIBER LINNAEUS, 1758. Acta Theriologica 10(21): 297-301. 30 Nov. 1965. In English with Polish summ. WR 121: 27

[Polish Acad. Sci., Inst. Ecol., Warsaw, Poland.] Combelen [Combelen-Bayer: N-(3'-Dimethylaminopropyl)-3-propionylphenothiazin] was used successfully as a tranquilizer and as an aid in an objective method of sex determination in live European beaver.

MUSKRAT AND NUTRIA

Abramov, V. K. [THE MUSKRAT IN THE PRIMORSKII KRAI.] Okhrana Prirody na Dal'nam Vostoke (Vladivostok) 1: 113-119. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I322. Transl. of Russian abstr.] WR 121: 28

Ben'kovskii, L. M. [THE ACCLIMATIZATION OF MUSKRATS ON SAKHALIN.] Voprosy Geografii Dal'nego Vostoka (Khabarovsk) 5: 103-117. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I323. Transl. of Russian abstr.] WR 121: 28

Korsakov, G. K. [A QUANTITATIVE ESTIMATE OF MUSKRATS IN THE FOREST-STEPPE OF WESTERN SIBERIA AND THE EFFECT OF THE WATER RELATIONS OF LAKES ON THE POPULATION SIZE.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 187-190. 1963. [From Biol. Abstr. 46 (18), 1965, from Referat. Zhur., Biol., 1964, no. 12I212. Transl. of Russian abstr.] WR 121: 28

Ostapenko, M. M. [THE BIOLOGY OF THE MUSKRAT IN TASHKENT OBLAST.] In: (Commercial game animals of Uzbekistan.) Akad. Nauk Uz. SSR (Tashkent). p. 43-56. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I321. Transl. of Russian abstr.] WR 121: 28

Strautman, E. I. [ESTIMATING THE MUSKRAT STOCKS OF THE IL' RIVER DELTA.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 191-195. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1963, no. 12I213. Transl. of Russian abstr.] WR 121: 28

FUR ANIMALS, GENERAL

Tatarinok, K. A. [FUR-BEARING ANIMALS OF PODOLIYA AND WAYS OF ENRICHING THE LOCAL WILD ANIMAL FAUNA.] In: (Information from a study of natural resources of Podolia.) (Ternopil'-Kremenets). p. 176-180. 1963. [From Biol. Abstr. 46 (18), 1965, from Referat. Zhur., Biol., 1964, no. 11I317. Transl. of Russian abstr.] WR 121: 28

MUSTELIDS

Abramov, K. G. [METHODS OF DETERMINING THE COEFFICIENT D--THE BAG OF SABLES IN ORGANIZED COMMERCIAL HUNTING.] Trudy Sikhote-Alinskogo Gos. Zapovednika 3: 299-303. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I343. Transl. of Russian abstr.] WR 121: 28

To determine the kill coefficient D for any hunting season, calculations should first be made of the average number of embryos per female which is determined by autopsies of females caught in spring before reproduction. At the beginning of hunting, a sample of sables is taken for determining the proportion of males, females, and first-year animals. The coefficient of elimination (E) is calculated by the formula

$$E = \frac{\%\text{ removal of first-year animals by the start of hunting}}{\%\text{ of females bearing young in the sample}}.$$

Knowing these values, it is possible to determine the number of young (V) surviving until the beginning of hunting. For efficient exploitation, D should be somewhat smaller than V.

Flook, Donald R., and James Rimmer. CANNIBALISM IN STARVING WOLVERINES AND SEX IDENTIFICATION FROM SKULLS. Canadian Field-Nat. 79(3): 171-173. July-Aug. 1965. WR 121: 28

[Canadian Wildl. Serv., Edmonton, Alberta.]

Maynard, Richard P. THE BIOLOGY AND CONTROL OF SKUNKS IN CALIFORNIA. Calif. Vector Views 12(4): 17-20, illus. Apr. 1965. [From J. Mammal. 47(1), 1966.] WR 121: 29

Sinha, A. A., C. H. Conaway, and K. W. Kenyon. REPRODUCTION IN THE FEMALE SEA OTTER. J. Wildl. Mgmt. 30(1): 121-130, 2 figs. Jan. 1966. WR 121: 29
[Wis. State Univ., Eau Claire.] Abstract: The morphology, histology, and field reports of 136 sexually mature female sea otters yielded information on the reproductive cycle. Free blastocysts were recovered from 9 tracts and judged to be present in 44 others. Two blastocysts from January and July were near implantation and 28 others were implanted pregnancies. It is concluded that sea otters breed throughout the year, having no distinct breeding season. Pups are born in every month of the year and litter size is normally one. The total period of gestation is not known but it includes a long period of delayed implantation. The tract is that of a typical carnivore. Interstitial glandular cells from the theca interna of degenerating (atretic) follicles are abundant during estrus. The corpora lutea of the free blastocyst stage are smaller and apparently less active than those of implanted pregnancy. Corpora lutea of implanted pregnancies show secondary cavities of various sizes. These vary markedly in different animals. The secondary cavities are not remnants of an antrum and are fluid filled. Histological changes in the uterus correlate with the ovarian cycle. The histological changes described for both ovary and uterus would be useful in identifying stages in the reproductive cycle for studies of productivity of sea otters.

DOGS, WOLVES, FOXES

Chipman, Robert K. COYOTE PREDATION ON AQUATIC TURTLES. J. Mammal. 47(1): 137-141. Feb. 1966. WR 121: 29
[Univ. Vt., Burlington.]

Chirkova, A. [RATIONAL THINKING ABOUT FOXES.] Okhota & Okhotnich'e Khoz. 9: 31-34. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 12I301. Transl. of Russian abstr.] WR 121: 29

Johnson, Harald Norlin. THE ECOLOGY OF RABIES IN WILDLIFE [STUDY OF WHAT PRECIPITATES EPIDEMICS OF RABIES IN WILD ANIMALS (CANIDAE).] Pacific Sci. Congr. Abstr. Symp. Pap. 10: 459-460. 1961. [From Biol. Abstr. 46(18), 1965.] WR 121: 29
Abstract only.

Shilyaeva, L. M. [THE "RED-PAW" DISEASE OF ARCTIC FOXES.] Sbornik Nauch.-Tekhn. Inform. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2(5): 20-22. 1961. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I351. Transl. of Russian abstr.] WR 121: 29

Watson, R. M. OBSERVATIONS ON THE BEHAVIOUR OF YOUNG SPOTTED HYAENA (CROCUTA CROCUTA) IN THE BURROW. East African Wildl. J. 3: 122-123, 1 fig. Aug. 1965. WR 121: 29
[P. O. Box 3134, Arusha, Tanzania.]

CATS

Allayarov, A. M. [INFORMATION ON THE ECOLOGY AND GEOGRAPHICAL DISTRIBUTION OF THE AFRICAN WILD CAT IN UZBEKISTAN.] Voprosy Biologii & Kraevoi Meditsiny. Akad. Nauk Uz. SSR (Tashkent) 4: 315-321. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 16I270. Transl. of Russian abstr.] WR 121: 29
"Felis ocreata."

BIG GAME, GENERAL

Anonymous. [THE ROLE OF WILD UNGULATES IN FORESTRY.] Soobshch. Inst. Lesa Akad. Nauk SSSR (Moscow). Vyp. 13. 127 p., illus. 1959. Price 7 rubles, 20 kopecks. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1960, no. 45449K. Transl. of Russian abstr.] WR 121: 30

The problems of the population of wild ungulates in the USSR (counting methods, total reserves and their distribution, population density), their food, damage to trees and shrubs, the regulation of ungulate population and the protection of plantations are presented in 18 articles.

Ansell, W. F. H. HIPPO CENSUS ON THE LUANGWA RIVER 1963-1964. Puku 3: 15-27, [4] figs. 1965. WR 121: 30

Abstract: Present hippo numbers in most of the southern game reserve are of the order of 30 per mile. While overstocking is not proved, it may be advisable to keep the population at this figure, which would involve an annual harvest of 200 (more if the rate of annual increase is above about 5.5%), and perhaps a similar number upstream in the northern reserve and Munyamadzi corridor. Problems connected with this would be processing and marketing rather than shooting. Disposal of the meat would have to be outside the Luangwa Valley.

Bannikov, A., and V. Teplov. [WAYS OF RATIONALIZING THE NUMBER OF ELK TAKEN: A DISCUSSION.] Okhota & Okhotnich'e Khoz. 12: 16-17. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I344. Transl. of Russian abstr.] WR 121: 30

Barros-Valenzuela, Rafael. ANTACIONES SOBRE LOS LÁMIDOS EN CHILE. [NOTES ON THE LAMIDAE IN CHILE.] An. Acad. Chilena Cienc. Nat. 48(26): 57-67, illus. 1963. [From Biol. Abstr. 46(15), 1965. In Spanish.] WR 121: 30

[Acad. Chilena Cienc. Nat., Santiago, Chile.]

Beale, Donald M. A SELF-COLLARING DEVICE FOR PRONGHORN ANTELOPE. J. Wildl. Mgmt. 30(1): 209-211, 2 figs. Jan. 1966. WR 121: 30

[Utah State Dept. Fish & Game, Logan.] Abstract: A self-collaring device, which uses rubber collars with plastic streamers attached, was developed for marking pronghorn antelope (Antilocapra americana). The collar is held in an extended position in a wooden frame over a water trough. When an animal attempts to drink, it puts its head through the collar and depresses a "trip-pan" suspended in the water. This releases the collar, and it contracts around the antelope's neck.

Bigler, William J. A MARKING HARNESS FOR THE COLLARED PECCARY. J. Wildl. Mgmt. 30(1): 213-214, 1 fig. Jan. 1966. WR 121: 30

[Ariz. Coop. Wildl. Res. Unit, Tucson.] Abstract: Peccaries (Pecari tajacu) were marked for identification in the field by the attachment of a polyethylene braided rope harness. The harness is a collar-like band which is held around the neck with an auxiliary strap behind the forelegs. "Saflag" or "Armor-tite" triangular color patches were attached to each side. A standard-size harness was fitted to each individual animal by tying the ends of the braided rope into a square knot and fastening a hog ring around the center of the knot. In 16 months of pen testing, harnesses were placed on eight captive animals. During this period the polyethylene braided rope remained in excellent condition, but the patch materials did show wear and fading. Between August 5, 1963, and February 23, 1964, harnesses were attached to 15 free-roaming peccaries. The color patch could readily be seen at 100 yards with 7 X binoculars.

Blood, D. A., and A. L. Lovaas. MEASUREMENTS AND WEIGHT RELATIONSHIPS IN MANITOBA ELK. J. Wildl. Mgmt. 30(1): 135-140. Jan. 1966. WR 121: 31
[Canadian Wildl. Serv., Edmonton.] Abstract: Whole weights (19 specimens) and standard body measurements (21 specimens) were obtained for Manitoba elk (Cervus canadensis manitobensis) collected at Riding Mountain National Park, Manitoba, within the rather indefinite type locality of this inadequately described subspecies. Mean whole weights of adult bulls (777 pounds) and adult cows (606 pounds) were greater than comparable weights for Rocky Mountain elk (C. c. nelsoni). Body measurements of the two subspecies appear to be very similar. These limited data suggest that the Manitoba elk is not smaller than the Rocky Mountain elk, as has been suggested by previous authors. Hog-dressed weights of 11 Manitoba elk averaged 75 percent of whole weight, with a range of 67 to 82 percent. Wide variation in this percentage, as reported in the literature, appears to result from seasonal changes in physical condition and stomach fill.

Bourlière, F. LES POPULATIONS D'ONGULES SAUVAGES AFRICAINS: CARACTERISTIQUES ECOLOGIQUES ET IMPLICATIONS ECONOMIQUES. [AFRICAN WILD UNGULATE POPULATIONS: ECOLOGICAL CHARACTERISTICS AND ECONOMIC IMPLICATIONS.] Terre & Vie 1962(2): 150-160. Apr.-June 1962. In French. WR 121: 31
[15 Avenue de Tourville, Paris, France.]

Bourlière, F. LES TECHNIQUES D'ECHANTILLONNAGE UTILISABLES POUR L'ETUDE DES POPULATIONS DE GRANDS MAMMIFERES SAUVAGES. [SAMPLING TECHNIQUES USEFUL IN THE STUDY OF BIG GAME POPULATIONS.] Terre & Vie 1963(2): 238-244. Apr.-June 1963. In French. WR 121: 31
[15 Avenue de Tourville, Paris, France.] Review paper.

Buss, Irven O., and Allan C. Brooks. OBSERVATIONS SUR LE NOMBRE LA MORTALITE ET LA REPRODUCTION DES ELEPHANTS EN OUGANDA. [OBSERVATIONS ON THE NUMBERS, MORTALITY AND REPRODUCTION OF ELEPHANTS IN UGANDA.] Terre & Vie 1962 (2): 175-182, 1 pl. Apr.-June 1962. In French. WR 121: 31
[Wash. State Univ., Pullman.]

Couturier, Marcel A. J. L'ACCLIMATATION DU BOUQUETIN DES ALPES (CAPRA AEGAGRUS IBEX IBEX). DIFFICULTES ET CONDITIONS DE REUSSITE. [THE ACCLIMATIZATION OF THE IBEX. DIFFICULTIES AND CONDITIONS OF SUCCESS.] Terre & Vie 1961(4): 440-445. Oct.-Dec. 1961. In French. WR 121: 31

DESERT BIGHORN COUNCIL, NINTH ANNUAL MEETING, APRIL 6, 7, 8, 1965. [ix] + 92 p., photo-offset. 1965. Available at $2.00 from Desert Bighorn Council, 1500 North Decatur Blvd., Las Vegas, Nev. WR 121: 31
Contains 19 papers, as follows: Status of bighorn in the Santa Rosa Mountains, Bonnar Blong; Summary of distinctive bighorn sheep observed on the Desert Game Range, Nevada, Charles G. Hansen; Management units and bighorn sheep herds on the Desert Game Range, Nevada, Charles G. Hansen; A preliminary reconnaissance and evaluation of the wildlife in the Pinacate region, Sonora, Mexico, John P. Russo; Exotic big game on public lands, Frank C. Craighead, Jr. and Raymond F. Dasmann; Status of bighorn in the River Mountains of Lake Mead National Recreation Area, Alan Denniston; A reconnaissance of Sierra Bighorn and bighorn ranges in the Sierra Nevada, Richard Riegelhuth; A history of the bighorn in California and Nevada, Reginald H. Barrett; Progress report on Joshua Tree National Monument bighorn research, Ralph E. Welles; A bighorn sheep habitat management plan, Edward R. Schneegas; Group mortality in the bighorn sheep, Gale Monson; A study of the blackbrush community on the Desert Game Range: 1, W. Glen Bradley; Preliminary report on ^{90}Sr levels in hock joints of desert bighorn sheep and mule deer, R. C. Kramp; Methods of post mortem description of wildlife ruminants with two commonly observed lesions in the desert bighorn sheep, Ronald E. Engel; Skull measurements of desert bighorn sheep from the Desert Game Range, Lee Baker and W. Glen Bradley; Necrosis and anomalies of the skull in desert bighorn sheep, Glen Allred and W. Glen Bradley; Bighorn hunting proposals, Steve James, Jr.; 1964-1965 progress and hunt report--Nevada, Raymond A. Brechbill; Competition between desert bighorn sheep and feral burros for forage in the Death Valley National Monument, Kenneth P. St. John, Jr.

Douglas, M. J. W. OCCURRENCE OF ACCESSORY CORPORA LUTEA IN RED DEER, CERVUS ELAPHUS. J. Mammal. 47(1): 152-153. Feb. 1966. WR 121: 32
[Forest Res. Inst., New Zealand Forest Serv., Rotorua, New Zealand.]

Dunn, Angus M. THE GASTRO-INTESTINAL HELMINTHS OF WILD RUMINANTS IN BRITAIN. I. ROE DEER, CAPREOLUS CAPREOLUS CAPREOLUS. Parasitology 55(4): 739-745. Nov. 1965. WR 121: 32
[Univ. Vet. School. Buccleuch St., Glasgow, Scotland.] Summary: The specific composition of gastro-intestinal helminthiasis in the roe deer, Capreolus capreolus capreolus, in Britain has been investigated. Twenty-four species are recorded, of which seventeen are new records for this host in Britain, and five are new host records. The epidemiology of the infections has been discussed and compared with data from roe deer in mainland Europe. Data are presented on the seasonal incidence of total worm populations and male:female ratios of parasites. It is concluded that domestic ruminants are not at risk in communal grazing with roe deer in this country.

Foster, J. B. MORTALITY AND AGEING OF BLACK RHINOCEROS IN EAST TSAVO PARK, KENYA. East African Wildl. J. 3: 118-119. Aug. 1965. WR 121: 32
[P. O. Box 30197, Nairobi, Kenya.]

Kaletskaya, M. L. [DAMAGE DONE TO YOUNG PINES BY ELKS IN THE DARWIN RESERVE.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 63-69. 1959. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1960, no. 45453. Transl. of Russian abstr.] WR 121: 32

Kuroda, Nagamichi. [ON THE PROTECTION OF CERVUS NIPPON KERAMAE.] J. Mammal. Soc. Japan 2(4): 109-110. Apr. 1965. [From J. Mammal. 47(1), 1966. In Japanese with English summ.] WR 121: 32

Manokhin, I. [PROTECTING THE SAIGA.] Okhota & Okhotnich'e Khoz. 1958 (12): 22. 1958. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1959, no. 60830. Transl. of Russian abstr.] WR 121: 32
"Saiga tatarica."

Mitchell, B. L. BREEDING, GROWTH AND AGEING CRITERIA OF LICHTENSTEIN'S HARTEBEEST. Puku 3: 97-104, 4 figs. 1965. WR 121: 32
[Kafue Natl. Park, Northern Rhodesia.]

Moyle, John B., editor. BIG GAME IN MINNESOTA. Minn. Dept. Conserv., Div. Game & Fish, Tech. Bull. no. 9. 231 p., illus. Apr. 1965. WR 121: 32
Eight species are treated, each in an individual section: The white-tailed deer in Minnesota, Walter H. Petraborg and Donald W. Burcalow; The mule deer in Minnesota, Bernard A. Fashingbauer; The moose in Minnesota, John M. Idstrom; The elk in Minnesota, Bernard A. Fashingbauer; The woodland caribou in Minnesota, Bernard A. Fashingbauer; The bison in Minnesota, Bernard A. Fashingbauer; The pronghorn antelope in Minnesota, Bernard A. Fashingbauer; The black bear in Minnesota, Charles Kinsey. "Information is presented on the history, biology, and past and present management. Prospects for the future are also included. Many of the management principles discussed as related to one species are really applicable to all, but to eliminate repetition, a particular principle may be stressed more for one species than for another."

Mueggler, Walter F. HERBICIDE TREATMENT OF BROWSE ON A BIG-GAME WINTER RANGE IN NORTHERN IDAHO. J. Wildl. Mgmt. 30(1): 141-151, 4 figs. Jan. 1966. WR 121: 32
[Intermountain Forest & Range Expt. Sta., Ogden, Utah.] Abstract: 2,4-D; 2,4,5-T, and a mixture of these two chemicals were tested for effectiveness in lowering the live crown and increasing the basal sprouting of browse grown beyond the reach of elk and deer. Concentrations of 0.75, 1.5, and 3 lb acid equivalent per acre were applied by helicopter in late June. Date of spraying was studied separately. The mixture at 3 lb per acre was most effective in

killing aerial crowns. Rocky Mountain maple (Acer glabrum) was relatively resistant to these sprays; Scouler willow (Salix scouleriana), Saskatoon serviceberry (Amelanchier alnifolia), creambush rockspirea (Holodiscus discolor), and bitter cherry (Prunus emarginata) were moderately sensitive; redstem ceanothus (Ceanothus sanguineus), and Lewis mockorange (Philadelphus lewisii) were very sensitive. Willow sprouted prolifically; rockspirea and maple sprouted moderately; ceanothus and mockorange sprouted poorly. Species differed considerably in reaction to date of spraying. Early summer and late summer spraying were usually more effective than midsummer spraying; however, the study revealed no seasonal pattern that could be used as a general guide for spraying to achieve optimum effectiveness in browse rehabilitation. Limitations governing present use of these herbicides for browse improvement in northern Idaho should be noted carefully. Only cautious use of spraying is proposed.

Muller, H. J. [INVESTIGATIONS ON METHODS FOR DETERMINING THE ECONOMICALLY ALLOWABLE DENSITY OF BROWSING GAME POPULATIONS IN THE FOREST BY MEANS OF EVALUATING GAME DAMAGE AND QUALITY OF SITES.] Arch. Forstwesen 14(5): 533-561. 1965. [From Bibliog. Agr. 30(2), 1966. In German with English summ.] WR 121: 33

Pfeffer, Pierre. PREMIERES ESTIMATIONS SUR LE STATUT ET LA STRUCTURE DES POPULATIONS DE MOUFLON (OVIS MUSIMON PALLAS) DANS LA RESERVE NATIONALE DE BAVELLA (CORSE). [PRELIMINARY ESTIMATIONS ON THE STATUS AND POPULATION STRUCTURE OF MOUFLON (OVIS MUSIMON) IN THE NATIONAL RESERVE OF BAVELLA (CORSICA).] Terre & Vie 1963(2): 129-139, 2 figs. + 2 pls. Apr.-June 1963. In French. WR 121: 33

Pfeffer, Pierre. LE ROLE DES FACTEURS CLIMATIQUES DANS LA DYNAMIQUE DES POPULATIONS D'ONGULES SAUVAGES DES STEPPES ET DESERTS PALEARCTIQUES. [THE ROLE OF CLIMATIC FACTORS UPON THE POPULATION DYNAMICS OF WILD UNGULATES OF THE STEPPES AND PALEARCTIC DESERTS.] Terre & Vie 1964(2): 167-177, 4 figs. Apr.-June 1964. In French. WR 121: 33

Simmons, Norman M., and J. L. Phillips. MODIFICATIONS OF A DYE-SPRAYING DEVICE FOR MARKING DESERT BIGHORN SHEEP. J. Wildl. Mgmt. 30(1): 208-209, 2 figs. Jan. 1966. WR 121: 33

[Ariz. Coop. Wildl. Res. Unit, Tucson.] Abstract: A solenoid-triggered spray device for marking desert bighorn sheep (Ovis canadensis) visiting waterholes in the summer was developed and tested by Bureau of Sport Fisheries and Wildlife personnel in 1964. The solenoid trigger permitted instantaneous release of the dye spray and inconspicuous placement of electric cable, resulting in frequent successful and accurate marking of desert bighorn sheep.

Spalding, D. J. TWINNING IN BIGHORN SHEEP. J. Wildl. Mgmt. 30(1): 207. Jan. 1966. WR 121: 33

[Fish & Game Branch, Penticton, British Columbia.] Abstract: Twelve bighorn ewes (Ovis canadensis), killed by vehicular traffic in southern British Columbia, were examined for pregnancy; 11 were pregnant, 4 of them were carrying twins.

Svedmyr, Arne, Gerolf von Zeipel, Karl Borg, and Hans-Jörgen Hansen. INFECTIONS WITH TICK-BORNE ENCEPHALITIS VIRUS IN THE SWEDISH POPULATION OF THE ELK (ALCES A. ALCES). Acta Path. & Microbiol. Scandinav. 65: 613-620, 5 figs. 1965. WR 121: 33

[Stockholm City & State Vet. Inst., Stockholm, Sweden.] Summary: Elks (Alces a. alces) from the endemic region of southeastern Sweden have neutralizing antibodies to TBE virus strikingly often, probably more often than have domestic cows. A strain of TBE virus was isolated from the brain and blood of an encephalitic elk calf.

Talbot, Lee M. RESULTATS PRELIMINAIRES D'UNE ETUDE DE LA DYNAMIQUE DES POPULATIONS DE GNOUS DU DISTRICT DE NAROK, KENYA. [PRELIMINARY OBSERVATIONS ON THE POPULATION DYNAMICS OF THE WILDEBEEST IN NAROK DISTRICT, KENYA.] Terre & Vie 1962(2): 161-174. Apr.-June 1962. In French. WR 121: 34
[Natl. Acad. Sci., Washington, D. C.] French adaption of a paper in English published in the East African Agricultural & Forestry Journal in 1961. [See WR 109: 33.]

Vesey-FitzGerald, L. D. E. F. LECHWE PASTURES. Puku 3: 143-147. 1965. WR 121: 34
A botanical description of the grasslands found in the Kobus leche range and their utilization by the 3 sspp. [K. l. leche, K. l. smithemani and K. l. grandicornis].

Wagenknecht, E. [THE EFFECTS OF BARK-SCALING BY RED DEER ON INDIVIDUAL STEMS OF PINE (PINUS SYLVESTRIS).] Arch. Forstwesen 14(7): 769-798. 1965. [From Bibliog. Agr. 30(2), 1966. In German with English summ.] WR 121: 34

Watson, R. M., and M. I. M. Turner. A COUNT OF THE LARGE MAMMALS OF THE LAKE MANYARA NATIONAL PARK: RESULTS AND DISCUSSION. East African Wildl. J. 3: 95-98, 2 figs. Aug. 1965. WR 121: 34
[Box 3134, Arusha, Tanzania.]

Wilson, Vivian J. OBSERVATIONS ON THE GREATER KUDU TRAGELAPHUS STREPSICEROS PALLAS FROM A TSETSE CONTROL HUNTING SCHEME IN NORTHERN RHODESIA. East African Wildl. J. 3: 27-37, 3 figs. Aug. 1965. WR 121: 34
[Natl. Museum, P. O. Box 240, Bulawayo, Rhodesia.] Average adult males weighed 567 pounds and females weighed 191 pounds. The peak of births occurred during Jan.-Apr. Notes are given on feeding habits, herd structure and body measurements.

Wilson, Vivian J., and Graham Child. NOTES ON KLIPSPRINGER FROM TSETSE FLY CONTROL AREAS IN EASTERN ZAMBIA. Arnoldia 1(35): 1-9. 14 May 1965. WR 121: 34
[Dept. Natl. Parks & Wildl. Mgmt., Salisbury, Rhodesia.] Abstract: Measurements from 90 klipspringer, Oreotragus oreotragus, from two Tsetse Control Areas in eastern Zambia revealed little sexual dimorphism except for the presence of horns in males. The species is limited to suitable rocky habitats where it feeds chiefly on browse and can apparently do without open water for long periods. It occurs singly or in small groups, especially pairs, breeds throughout the year and is becoming over-populated in some areas, possibly due to the stimulus of hunting.

Wilson, V. J., and P. W. Edwards. DATA FROM A FEMALE RHINOCEROS AND FOETUS (DICEROS BICORNIS LINN.) FROM THE FORT JAMESON DISTRICT. Puku 3: 179-180. 1965. WR 121: 34

DEER (Odocoileus)

Friend, Milton, and William Hesselton. A WOOLLY-COATED WHITE-TAILED DEER FROM NEW YORK STATE. J. Mammal. 47(1): 154-155, 2 figs. Feb. 1966. WR 121: 34
[N. Y. State Wildl. Res. Lab., Delmar.]

Gilbert, Frederick F. AGING WHITE-TAILED DEER BY ANNULI IN THE CEMENTUM OF THE FIRST INCISOR. J. Wildl. Mgmt. 30(1): 200-202, 3 figs. Jan. 1966. WR 121: 34
[Univ. Guelph, Guelph, Ontario, Canada.]

McMahan, Craig A. SUITABILITY OF GRAZING ENCLOSURES FOR DEER AND LIVESTOCK RESEARCH ON THE KERR WILDLIFE MANAGEMENT AREA, TEXAS. J. Wildl. Mgmt. 30(1): 151-162, 6 figs. Jan. 1966. WR 121: 35

[Texas Parks & Wildl. Dept., Harlingen.] Abstract: An evaluation was made of the suitability of small rectangular 96-acre deer-proof enclosures for the study of deer response to heavy, moderate, and light continuous livestock grazing. Differences in plant composition and degree of availability in the enclosures from the growth in larger, operational-size pastures in Kerr County, Texas, are attributed to the constant grazing pressure in the enclosures--an extreme continuous-use system of grazing not normally practiced by private landowners in the area. The production of white-tailed deer (Odocoileus virginianus) under all livestock grazing pressures is poor because the animals must constantly compete with livestock. Free-ranging deer, however, tend to avoid livestock, and to use those pastures being rested from them. Also, extreme continuous-use by livestock, even under light grazing pressure, quickly eliminates all preferred and some staple deer foods. Under these conditions deer cannot be forced to use the less palatable forbs and grasses as livestock do. Deer used particular sites in the enclosures for feeding and resting, and were more discriminating in their foraging habits than livestock. All of the acreage in each enclosure was used by livestock in feeding. Free-ranging deer seem to have a small home range that is definite in size and shape and that provides handy access to preferred feeding, resting, and cover sites. Apparently deer will show this preference even under penned conditions, and adopt a proportionally smaller home range. In the Edwards Plateau region of Texas, small continuous-use enclosures appear to be adequate to demonstrate livestock-range principles, but unless operationally modified, they are not suitable for measuring deer population dynamics as affected by livestock grazing pressures.

Nixon, Charles M. THE RELATIONSHIP BETWEEN THE ANNUAL ACCIDENTAL DEER KILL AND THE LEGAL HARVEST IN OHIO. Game Res. Ohio 3: 137-152, 8 figs. July 1965. WR 121: 35

[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] The sex and age composition and magnitude of the accidental deer kill in Ohio for the period Apr. 1961 through Dec. 1963, in relation to a known harvest of deer in the fall of 1962 and 1963. Only the Jan.-Mar. northeast region and the Jan.-Mar. and Jan.-Nov. western region accidental kills were significantly correlated with subsequent legal kills. Accidental kills from unglaciated Ohio were not significantly correlated with legal kill.--From abstr.

Nixon, Charles M. SOME OBSERVATIONS OF DEER RANGE IN SOUTHEASTERN OHIO. Game Res. Ohio 3: 107-122, 9 figs. July 1965. WR 121: 35

[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Abstract: The possibility of initiating an intensive white-tailed deer (Dama virginiana) study in southeastern Ohio was explored through a review of existing deer habitat studies in the eastern United States and observations of present deer habitat relationships in southern Ohio. The winter home range of one adult male was determined using snow tracking. This animal moved over 1439 acres during a 16-day period. Additional winter track counts enabled food habits information to be gathered on ten plant species. Eleven semi-tame doe deer were collared and released, enabling additional movement data to be collected. One of the does was reported 20 air miles from the point of release. Somewhat greater movement was noted in the Pike County release, an area with limited deer range. Three census methods were tried within the deer habitat of southeastern Ohio: (1) drive-track count method, (2) track imprint method around water areas, and (3) spotlight method. Census results suggested low deer densities.

Nixon, Charles M. WHITE-TAILED DEER GROWTH AND PRODUCTIVITY IN EASTERN OHIO. Game Res. Ohio 3: 123-136, 6 figs. July 1965. WR 121: 36
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] "An analysis of white-tailed deer growth and productivity data collected within the 23,000-acre Ravenna Arsenal and from two distinct physiographic regions in eastern Ohio. This analysis was undertaken to determine (1) trends in physical development of the Ravenna herd since 1955; (2) comparative growth and ovulation rates of arsenal deer and deer on open range in eastern Ohio; and (3) comparative growth and ovulation rates of deer herds in two distinct physiographic regions of eastern Ohio."

Park, Robert L., Oliver Skov, George A. Seaman, and Richard M. Bond. DEER AND CATTLE FEVER TICKS. J. Wildl. Mgmt. 30(1): 202-203, 1 fig. Jan. 1966. WR 121: 36
[Agr. Res. Serv., Kingshill, St. Croix, U. S. Virgin Islands.] Abstract: Tropical cattle ticks (Boophilus microplus) seeded as larvae on penned white-tailed deer (Odocoileus virginianus) completed the entire life cycle on the deer.

Ransom, A. Brian. BREEDING SEASONS OF WHITE-TAILED DEER IN MANITOBA. Canadian J. Zool. 44(1): 59-62. Jan. 1966. WR 121: 36
[Dept. Mines & Nat. Resources, Winnipeg, Manitoba, Canada.] Abstract: White-tailed deer (Odocoileus virginianus) in Manitoba breed from late October to December, but unexpected regional differences in timing were found that could not be explained by latitudinal climatic factors. Nutritional and genetic factors may have been involved.

Ransom, A. Brian. DETERMINING AGE OF WHITE-TAILED DEER FROM LAYERS IN CEMENTUM OF MOLARS. J. Wildl. Mgmt. 30(1): 197-199, 1 fig. Jan. 1966. WR 121: 36
[Manitoba Wildl. Branch, Winnipeg.] Abstract: The ages of white-tailed deer (Odocoileus virginianus) can be determined from alternate light and dark layers occurring in the dental cementum of M_1. The method used in counting the layers does not require histological techniques.

Short, Henry L. EFFECTS OF CELLULOSE LEVELS ON THE APPARENT DIGESTIBILITY OF FEEDS EATEN BY MULE DEER. J. Wildl. Mgmt. 30(1): 163-167. Jan. 1966. WR 121: 36
[Southern Forest Expt. Sta., Nacogdoches, Texas.] Abstract: Three artificial diets that varied in cellulose content but were similar in protein and energy levels were fed to three mule deer according to a latin square design. Food intake for each deer, on each diet, during each feeding period was similar. Energy and dry matter digestion varied between diets ($P<0.05$) and both digestible energy and digestible dry matter were inversely related to dietary cellulose content. Cellulose digestion was somewhat variable between animals, feeds, and feeding trial periods. Protein digestion was similar in all feeding trials but crude fat digestion was somewhat greater on the low-cellulose diet. Limited cellulose digestion occurs in mule deer and affects energy and dry matter digestion of foodstuffs.

Stickney, Peter F. BROWSE UTILIZATION BASED ON PERCENTAGE OF TWIG NUMBERS BROWSED. J. Wildl. Mgmt. 30(1): 204-206, 1 fig. Jan. 1966. WR 121: 36
[Intermountain Forest & Range Expt. Sta., Missoula, Mont.] Abstract: This technique for rapidly estimating the utilization of browse by deer is based on percentage of twig numbers browsed. Proportion of length of twigs browsed correlated well with proportion of number of twigs browsed.

MAMMALS--MARINE

Budker, P., and C. Roux. UN PETIT RORQUAL OU "MINKE," (BALAENOPTERA ACUTOROSTRATA, LACEP.) SUR LES CÔTES DE BRETANGE-SUD, AVEC DESCRIPTION D'UN FOETUS. [A LEAST RORQUAL (BALAENOPTERA ACUTO-ROSTRATA) OFF THE COAST OF SOUTHERN BRITTANY WITH A DESCRIPTION OF A FETUS.] Mammalia (Paris) 29(2): 250-257, 2 pls. June 1965. [From J. Mammal. 47(1), 1966. In French.] WR 121: 37

Csordas, S. E., and Susan E. Ingham. THE NEW ZEALAND FUR SEAL, ARCTOCEPHALUS FORSTERI (LESSON), AT MACQUARIE ISLAND, 1949-64. CSIRO Wildl. Res. 10(1): 83-99, 4 figs. + 4 pls. Nov. 1965. WR 121: 37
[Central Chest Clinic, Melbourne, Australia.]

Fedorov, S. G. [CONVENTIONAL PRINCIPLES FOR REGULATING THE TAKING OF FUR SEALS IN THE NORTHERN PART OF THE PACIFIC OCEAN.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 9-21. 1964. [From Biol. Abstr. 46 (20), 1965, from Referat. Zhur., Biol., 1964, no. 20I302. Transl. of Russian abstr. Original with English summ.] WR 121: 37

Hershkovitz, Philip. CATALOG OF LIVING WHALES. Smithsonian Inst. U. S. Natl. Museum Bull. 246. viii + 258 p. 1966. Available from Supt. Documents at $1.00. WR 121: 37
[Chicago Nat. Hist. Museum, Chicago, Ill.] "Virtually all original published records of the occurrence of cetaceans in the rivers, on the coasts, islands, and continental shelves of South America have been consulted and are cited herein. Bibliographic references to species or specimens recorded from other waters have been restricted to original descriptions of named forms, critical taxonomic revisions, marginal locality records, and some of the outstanding or interesting research on the biology of whales. Except for a few important works, commercial, statistical, and popular accounts of whales are not cited in this catalog."

Ivashin, M. V. NEW METHOD OF THE EXTRACTION OF WHALE'S EAR PLUGS. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 54(4): 80-81. Apr. 1965. [From J. Mammal. 47(1), 1966.] WR 121: 37

Lüders, Konrad. HALTUNG UND AUFZUCHT VON SEEHUNDEN. [BEHAVIOR AND BREEDING OF SEALS.] Bull. Inst. Oceanog. Monaco spec. no. 1A. p. 15-22, illus. 1962. [From Biol. Abstr. 46(16), 1965. In German with French and English summ.] WR 121: 37
[Seewasseraquarium, Wilhelmshaven, W. Germany.] "Phoca vitulina."

Marakov, S. V. [A CHARACTERIZATION OF THE INTRASPECIFIC INTERRELATIONS OF THE NORTHERN FUR SEAL.] Sbornik Nauch.-Tekh. Inform. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 10: 77-88. 1964. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 22I302. Transl. of Russian abstr.] WR 121: 37

Orr, Robert T. INTERSPECIFIC BEHAVIOR AMONG PINNIPEDS. Z. Säugetierk. 30 (3): 163-171. May 1965. [From J. Mammal. 47(1), 1966.] WR 121: 37

Pierard, Jean. SEXUAL DIMORPHISM IN LARYNGEAL SIZE OF THE NORTHERN FUR SEAL. J. Mammal. 47(1): 143-145, 2 figs. Feb. 1966. WR 121: 37
[Ecole Méd. Vét., Saint-Hyacinthe, Quebec, Canada.] A striking difference in size between sexually mature male and female larynxes.

Schevill, William E., and William A. Watkins. UNDERWATER CALLS OF LEPTONYCHOTES (WEDDELL SEAL). Zoologica 50(1): 45-46, 1 pl. 28 May 1965. [From J. Mammal. 47(1), 1966.] WR 121: 37

Sergeant, D. E. MIGRATION OF HARP SEALS PAGOPHILUS GROENLANDICUS (ERXLEBEN) IN THE NORTHWEST ATLANTIC. J. Fish. Res. Board Canada 22(2): 433-464, illus., maps. 1965. [From Biol. Abstr. 46(17), 1965.] WR 121: 38
[Fish. Res. Board Canada, Biol. Sta., Sainte Anne de Bellevue, Quebec, Canada.] Based on 1300 marked individuals during 5 year study period.

Spalding, David J. ERUPTION OF PERMANENT CANINE TEETH IN THE NORTHERN SEA LION. J. Mammal. 47(1): 157-158, 1 pl. Feb. 1966. WR 121: 38
[Fish & Game Branch, Penticton, British Columbia.]

Timoshenko, Yu. K. [THE FEEDING HABITS OF THE HARP SEAL (PHOCA GROENLANDICA).] Sbornik Nauch.-Issled. Rabot Sev. Otd. Polyarnoga Nauch.-Issled. Proekt Inst. Morskogo Rybn. Khoz. Okeanogr. p. 48-52. 1962. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1964, no. 18I232. Transl. of Russian abstr.] WR 121: 38

Yablokov, A. V. [MORPHOLOGICAL CHARACTERIZATION OF THE HOODED SEAL OF THE GREENLAND SEA.] Sbornik Nauch.-Issled. Rabot Sev. Otd. Polyarnogo Nauch.-Issled. Proekt Inst. Morskogo Rybn. Khoz. Okeanogr. p. 64-72. 1962. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 22I298. Transl. of Russian abstr.] WR 121: 38

Yablokov, A. V. [MORPHOLOGICAL CRITERIA FOR DETERMINING THE INDEPENDENCE OF POPULATIONS OF SOME PINNIPEDS.] In: (The Second All-Union Conference for the Study of Marine Mammals, 1963.) Akad. Nauk SSSR (Moscow-Leningrad). p. 50. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 15I292. In Russian.] WR 121: 38

MAMMALS--OTHER GROUPS

Ealey, E. H. M. L'EURO, OU KANGOUROU DES COLLINES, MACROPUS ROBUSTUS, DANS LE NORD-OUEST DE L'AUSTRALIE. [THE EURO OR HILL KANGAROO (MACROPUS ROBUSTUS) IN NORTH-WEST AUSTRALIA.] Terre & Vie 1964(1): 3-19, 8 figs. + 2 pls. Jan.-Mar. 1964. In French. WR 121: 38
[Monash Univ., Clayton, Victoria, Australia.]

King, J. M. A FIELD GUIDE TO THE REPRODUCTION OF THE GRANT'S ZEBRA AND GREVY'S ZEBRA. East African Wildl. J. 3: 99-117, 10 figs. Aug. 1965. WR 121: 38
[Univ. Cambridge, Cambridge, England.]

Klingel, Hans. NOTES ON THE BIOLOGY OF THE PLAINS ZEBRA EQUUS QUAGGA BOEHMI MATSCHIE. East African Wildl. J. 3: 86-88, 1 fig. Aug. 1965. WR 121: 38
[P. O. Box 3134, Arusha, Tanzania.] Social structure, seasonal distribution of foaling, foaling rate and intervals, sex ratio and age at sexual maturity of the plains zebra.

Morrison, Peter. INSULATIVE FLEXIBILITY IN THE GUANACO. J. Mammal. 47(1): 18-23, 2 figs. Feb. 1966. WR 121: 38
[Univ. Chile, Santiago, Chile.] Abstract: The surface of the guanaco (Lama guanicoe) varies from an extensive densely matted fur above (40% of total area) to sharply defined areas of almost bare skin below (20% of total area). These contrasting areas could allow an unusual flexibility in thermal conductance, as much as 5-fold in still air and perhaps 25-fold with wind.

Sale, J. B. THE FEEDING BEHAVIOUR OF ROCK HYRACES (GENERA PROCAVIA AND HETEROHYRAX) IN KENYA. East African Wildl. J. 3: 1-18, 10 figs. Aug. 1965. WR 121: 38
[Univ. Coll., P. O. Box 30197, Nairobi, Kenya.]

Taylor, R. H., and W. B. Magnussen. IMMOBILISING LIVE-TRAPPED OPOSSUMS WITH SUCCINYLCHOLINE CHLORIDE. New Zealand J. Sci. 8(4): 531-536, 3 figs. Dec. 1965. WR 121: 39

[Animal Ecology Div., DSIR, Wellington, New Zealand.] Summary: Brush-tailed opossums (Trichosurus vulpecula) are readily immobilised by intramuscular injection of succinylcholine chloride. The recommended dose to aid examination and marking in the field is 0.65 mg/kg.

Turner, M. I. M., and R. M. Watson. AN INTRODUCTORY STUDY ON THE ECOLOGY OF HYRAX (DENDROHYRAX BRUCEI AND PROCAVIA JOHNSTONI) IN THE SERENGETI NATIONAL PARK. East African Wildl. J. 3: 49-60, 7 figs. Aug. 1965. WR 121: 39

[P. O. Box 3134, Arusha, Tanzania.]

BIRDS--GENERAL

Belopol'skii, L. [NEW DATA ON THE ECOLOGY OF THE MULTIPLICATION OF THE CHAFFINCH (FRINGILLA COELEBS) AND THE BRAMBLING (FRINGILLA MONTIFRINGILLA) IN KARELIA.] Ezheg. Obshch. Estest-Voispyt Akad. Nauk Est. SSR 55: 227-239. 1962. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1964, no. 14I167. Transl. of Russian abstr. Original with English summ.] WR 121: 39

Campbell, Bruce. THE BRITISH BREEDING DISTRIBUTION OF THE PIED FLYCATCHER, 1953-62. British Birds 12(4): 305-318. Dec. 1965. WR 121: 39

Davison, Verne E. NEST SITES OF 400 EASTERN SPECIES / FOR 36 OF THEM, BIRDHOUSES ARE HOME. Audubon Magazine 67(4): 258-259. July-Aug. 1965. WR 121: 39

[SCS, Portland, Oreg.] Forty-four species nest in cavities or crevices; 190 spp. nest on the ground; 131 spp. nest off the ground in upland habitat and 73 spp. nest off the ground in wetland habitat.

Ezerskas, L. I. [SPECIES OF BIRDS WHICH RARELY NEST IN THE ARTIFICIAL NESTING PLACES OF THE FORESTS OF LITHUANIA.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 71-74. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 14I193. In Russian.] WR 121: 39

Jouanin, Christian. INVENTAIRE DES OISEAUX ETEINTS OU EN VOIE D'EXTINCTION CONSERVES AU MUSEUM DE PARIS. [INVENTORY OF EXTINCT OR VANISHING BIRDS PRESERVED AT THE PARIS MUSEUM.] Terre & Vie 1962(3): 257-301. July-Sept. 1962. In French. WR 121: 39

MacArthur, Robert H. ENVIRONMENTAL FACTORS AFFECTING BIRD SPECIES DIVERSITY. Am. Nat. 98(903): 387-397, illus. 1964. [From Biol. Abstr. 46(16), 1965.] WR 121: 39

[Univ. Pa., Philadelphia.]

Mizuta, Kuniyasu. LOCAL DISTRIBUTION OF TWO SWALLOWS OF GENUS HIRUNDO, AND BREEDING SUCCESS OF H. RUSTICA. Res. Population Ecol. 5(2): 130-138, 4 figs. Dec. 1963. In English with Japanese summ. WR 121: 39

[Kyoto Univ., Kyoto, Japan.] Summary: The distribution of nests of the swallows was investigated in 1957, 1962 and 1963 at Koriyama, Nara Prefecture. Roughly speaking, the nest of Hirundo rustica was located in the urban areas, and that of H. daurica in the rural areas. This subdivision of the habitat seems to be due to the traditional system more or less depending on some interactions between them. The trend of the decrease in the nest number has not been found out from the 3-year studies. The observation on the breeding success of H. rustica was done in 1963, and it was estimated that 869 young in total fledged out from the study area.

BIRDS--GENERAL--Continued

Wallace, George J. STUDIES ON NEOTROPICAL THRUSHES IN COLOMBIA. Mich. State Univ. Museum Publ., Biol. Ser. 3(1): 1-48. 3 Dec. 1965. WR 121: 40
Studies of Turdus fuscater, T. ignobilis, Catharus aurantiirostris and Myadestes ralloides made during 1955-56.

Winterbottom, J. M. NOTE ON THE RELATIVE ABUNDANCE OF PASSERINE AND NON-PASSERINE BIRDS IN AFRICA SOUTH OF THE EQUATOR. Am. Nat. 98(903): 450-452. 1964. [From Biol. Abstr. 46(16), 1965.] WR 121: 40
[Percy FitzPatrick Inst. African Ornithol., Univ. Cape Town, Cape Town, South Africa.]

Zatsepina, R. A. [THE IMPORTANCE OF SYLVIID BIRDS IN THE BIOCOENOSIS OF THE VOLGA-KAMA REGION.] In: (Natural resources of the Volga-Kama region. Animal world.) Nauka (Moscow). p. 107-111. 1964. [From Biol. Abstr. 46(15), 1965, from Referat. Zhur., Biol., 1964, no. 22I213. Transl. of Russian abstr.] WR 121: 40

BIRDS--TECHNIQUES

Caughley, Graeme. A METHOD OF COMPARING THE NUMBERS OF SPECIES IN AREAS COVERED BY DIFFERENT PERIODS OF OBSERVATION. Emu 65(2): 115-118. Oct. 1965. WR 121: 40
[New Zealand Forest Serv., Rotorua.] Summary: The number of new species added to a checklist tends to remain constant with successive doublings of time, irrespective of the breeding status of the species. This fact can be utilised to calculate, from the number of species seen over ten days, the number that would be seen in an area over a longer period. The density of species in different areas and habitats can be compared by adjusting each total for the time spent in observing.

Crouch, Dennis E., and Leonard S. Crouch. A PORTABLE AVIAN EGG INCUBATOR. J. Wildl. Mgmt. 30(1): 187-189, 1 fig. Jan. 1966. WR 121: 40
[Bremerton, Wash.] Abstract: A portable incubator for field-collected avian eggs is described. It consists of an insulated plywood housing, light-bulb heating element, and thermoswitch. The device was successfully used for two seasons to transport partially incubated eggs 300 miles.

Demaret, A. NOTES SUR LA TENDERIE AU FILET DANS LA REGION LIEGEOISE. [NOTES ON BIRD SNARING IN THE REGION OF LIÈGE.] Gerfaut Rev. Belg. Ornithol. 53(1): 49-62. 1963. [From Biol. Abstr. 46(16), 1965. In French with Flemish summ.] WR 121: 40

Dorst, Jean. LES TECHNIQUES D'ECHANTILLONNAGE DANS L'ETUDE DES POPULATIONS D'OISEAUX. [SAMPLING TECHNIQUES FOR BIRD POPULATION STUDIES.] Terre & Vie 1963(2): 180-202. Apr.-June 1963. In French. WR 121: 40
[Muséum Natl. d'Histoire Naturelle, Paris, France.] Review paper.

Morton, Martin L. AN APPARATUS FOR CONTINUOUS RECORDING OF FOOD INTAKE IN CAGED BIRDS. Ecology 46(6): 888-890, 4 figs. Autumn 1965. WR 121: 40
[Wash. State Univ., Pullman.] Abstract: A description is made of an apparatus that will provide a continuous record of food intake by small caged birds. This apparatus employs strain gages as its principal transducer. It can detect a weight change of 0.05 g in 15 g, has an accuracy of greater than 99%, and yields a linear record of weight versus strain. The method has many obvious laboratory applications. Sample data are presented.

Nef, L. INTRODUCTION AUX TECHNIQUES DE DENOMBREMENT DE POPULATIONS D'OISEAUX. [INTRODUCTION TO TECHNIQUES OF ENUMERATION OF BIRD POPULATIONS.] Gerfaut Rev. Belg. Ornithol. 52(2): 392-407. 1962. [From Biol. Abstr. 46 (15), 1965. In French with Flemish summ.] WR 121: 40
[Centrum Bosbiol. Onderzoek, Bokrijk-Genk, Belgium.]

BIRDS--TECHNIQUES--Continued

Vindokurov, A. A. [MAKING CENSUSES OF BIRDS IN MOUNTAIN FORESTS.] In: Organization and methods for counting birds and harmful rodents.) Akad. Nauk SSR (Moscow). p. 148-151. 1963. [From Biol. Abstr. 46(15), 1965, from Referat. Zhur., Biol., 1964, no. 23I132. Transl. of Russian abstr.] WR 121: 41

BIRDS--MORPHOLOGY & PHYSIOLOGY

Amanova, M. A. [SOME DATA ON THE WATER REQUIREMENTS OF BIRDS IN THE DESERT.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 199-202. 1964. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1964, no. 24I214. Transl. of Russian abstr.] WR 121: 41

Aschoff, J. BIOLOGISCHE PERIODIK ALS SELBSTERREGTE SCHWINGUNG. [THE BIOLOGICAL PERIODICITY OF SELF-SUSTAINED OSCILLATIONS.] Arbeitsgemeinschaft für Forschung des Landes Nordrhein-Westfalen 183: 51-79. (No date). [From Ibis 107(3), 1965. In German.] WR 121: 41

In this and the following two papers, the author reviews some of the more recent work on diurnal rhythms. The first paper deals with theoretical aspects; he concludes that circadian rhythms are self-sustained oscillations, synchronized with the environment by Zeitgeben (timegivers)--of which the most important is the day-night shift. In the second paper, he discusses the possible survival value of these widespread rhythms, stressing the importance of having a self-sustained oscillatory system; he describes experiments on the altering of the "internal clock" in migratory birds. The last paper deals with the ways in which light- and dark-adapted cycles can be distinguished.

Aschoff, J. SURVIVAL VALUE OF DIURNAL RHYTHMS. Symp. Zool. Soc. London 13: 79-98. 1964. [From Ibis 107(3), 1965.] WR 121: 41

Aschoff, J. DIE TAGESPERIODIK LICHT- UND DUNKELAKTIVER TIERE. [THE PERIODICITY OF LIGHT- AND DARK-ADAPTED ANIMALS.] Rev. Suisse Zool. 71: 528-558. 1964. [From Ibis 107(3), 1965. In German.] WR 121: 41

Bock, Walter J. AN APPROACH TO THE FUNCTIONAL ANALYSIS OF BILL SHAPE. Auk 83(1): 10-51, 16 figs. Jan. 1966. WR 121: 41

[Columbia Univ., New York, N. Y.] On the influence of force, size and weight of the bird's bill on the bill's shape.

Brown, Lauren E., and Harvey I. Fisher. ELECTROPHORETIC STUDY OF BLOOD PROTEINS OF SOME PROCELLARIIFORM BIRDS. Auk 83(1): 111-115. Jan. 1966. WR 121: 41

[Univ. Texas, Austin.]

Cade, Tom J., and Lewis I. Greenwald. DRINKING BEHAVIOR OF MOUSEBIRDS IN THE NAMIB DESERT, SOUTHERN AFRICA. Auk 83(1): 126-128. Jan. 1966. WR 121: 41

[Syracuse Univ., Syracuse, N. Y.] Red-faced mousebirds (Colius indicus) were observed to drink water in a continuous draught as is characteristic of the Columbiformes.

Dawson, William R., Vaughan H. Shoemaker, Harrison B. Tordoff, and Arieh Borut. OBSERVATIONS ON METABOLISM OF SODIUM CHLORIDE IN THE RED CROSSBILL. Auk 82(4): 606-623, 2 figs. Oct. 1965. WR 121: 41

[Univ. Mich., Ann Arbor.] The ad libitum intake of tap water by red crossbills (Loxia curvirostra) was equivalent to 22% of body weight/day. The rate of fluid intake increased so that birds daily ingested more than their body weight of salt water. The maximum concentration on which the birds maintained body weight was 0.2 M. Red crossbills showed no preference for distilled water or 0.100 M NaCl, but they showed a strong preference for water compared with 0.200 M NaCl.--From summ.

Gifford, Cameron E., and Eugene P. Odum. BIOENERGETICS OF LIPID DEPOSITION IN THE BOBOLINK, A TRANS-EQUATORIAL MIGRANT. Condor 67(5): 383-403, 7 figs. Sept.-Oct. 1965. WR 121: 42

[Earlham Coll., Richmond, Ind.] Autumn bobolink (Dolichonyx oryzivorus) migrants in northern Fla. increased in weight from a mean of 38 gm in early Oct. in males and from 32 to 40 gm in females. The increase in weight was entirely the result of deposition of dry fat. The mean spring weight of migrants from the same locality was less than 36 gm for males and 28 gm for females. Hyperphagia was the chief means of achieving a positive energy balance during the autumn premigratory fattening period. Zugunruhe began shortly after the onset of weight increase and reached its peak with maximum fat deposition. Short photoperiods accelerated and long photoperiods retarded autumn fattening. Captive birds remained fat throughout the fall and winter and rapidly used their fat in the spring. There was no consistent fat deposition in spring among captive birds.--From summ.

Hailman, Jack P. CLIFF-NESTING ADAPTATIONS OF THE GALÁPAGOS SWALLOW-TAILED GULL. Wilson Bull. 77(4): 346-362, 3 figs. Dec. 1965. WR 121: 42

[Inst. Animal Behavior, 31 Fulton St., Newark, N. J.]

Hamner, William Marion, III. PHOTOPERIODIC TESTICULAR RESPONSES OF THE HOUSE FINCH CARPODACUS MEXICANUS. Ph.D. thesis, Univ. Calif. (Los Angeles). 89 p. 1965. [From Dissertation Abstr. 26(6), 1965.] WR 121: 42

Horwich, Robert H. AN ONTOGENY OF WING-FLASHING IN THE MOCKINGBIRD WITH REFERENCE TO OTHER BEHAVIORS. Wilson Bull. 77(3): 264-281, 5 figs. Sept. 1965. WR 121: 42

[Univ. Md., College Park.] Wing-flashing developed in captive-reared mockingbirds (Mimus polyglottos) of both sexes at age 9-13 days. It developed in one bird visually isolated from all other birds. Wing-flashing was associated with wariness caused by strange objects and unexpected stimuli. The amount of wing-flashing varied with age, tameness and individualities of the birds.

Hundley, Margaret H., and C. Russell Mason. BIRDS DEVELOP A TASTE FOR SUGAR. Wilson Bull. 77(4): 408. Dec. 1965. WR 121: 42

[Fla. Audubon Soc., Maitland.] Blue-gray tanagers (Thraupis virens), white-lined tanagers (Tachyphonus rufus), and little red-headed woodpeckers (Centurus rubicapillus) were observed continually feeding on sugar. "This zest for sugar probably dates back to the period following the hurricane of September 1963, when much of the foliage was blown off the trees and shrubs. Food was scarce, and many people interested in birds found them thronging about their houses in search of food."

Kale, Herbert W., II. PLUMAGES AND MOLTS IN THE LONG-BILLED MARSH WREN. Auk 83(1): 140-141. Jan. 1966. WR 121: 42

[Encephalitis Res. Center, 4001 Tampa Bay Blvd., Tampa, Fla.]

Kartashev, N. N. [SOME PHYSIOLOGICAL INDICES OF THE SEA BIRDS OF THE BARENTS SEA.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 81-82. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 13I259. Transl. of Russian abstr.] WR 121: 42

Short, Lester L., Jr., and Stephen W. Simon. ADDITIONAL HYBRIDS OF THE SLATE-COLORED JUNCO AND THE WHITE-THROATED SPARROW. Condor 67(5): 438-442. Sept.-Oct. 1965. WR 121: 42

[US Natl. Museum, Washington, D. C.] With detailed descriptions of 3 hybrids of slate-colored juncos (Junco hyemalis) and white-throated sparrows (Zonotrichia albicollis).

Simpson, K. G. THE DISPERSAL OF REGURGITATED PUMICE GIZZARD-STONES BY THE SOUTHERN SKUA AT MACQUARIE ISLAND. Emu 65(2): 119-124. Oct. 1965. WR 121: 43
[CSIRO, Div. Wildl. Res., Canberra, Australia.] Summary: Since June, 1963, considerable quantities of pumice flotsam have been washed up at Macquarie Island. The southern skua, Catharacta skua lonnbergi, has largely adopted pumice as a gizzard-stone, and also swallows pumice pebbles to digest attached goose barnacles, Lepas australis. Pumice subsequently regurgitated by skuas has been dispersed widely over the island.

Spring, Lowell W. CLIMBING AND PECKING ADAPTATIONS IN SOME NORTH AMERICAN WOODPECKERS. Condor 67(6): 457-488, 16 figs. Nov.-Dec. 1965. WR 121: 43
[Univ. Wash., Seattle.]

Sullivan, John O. "FLIGHTLESSNESS" IN THE DIPPER. Condor 67(6): 535-536. Nov.-Dec. 1965. WR 121: 43
[Univ. Mont., Missoula.] Observations indicated that the American dipper (Cinclus mexicanus) loses all of its flight feathers at the same time and thus has a flightless period similar to that of waterfowl.

Tordoff, Harrison B., and William R. Dawson. THE INFLUENCE OF DAYLENGTH ON REPRODUCTIVE TIMING IN THE RED CROSSBILL. Condor 67(5): 416-422, 2 figs. Sept.-Oct. 1965. WR 121: 43
[Univ. Mich., Ann Arbor.] The red crossbill (Loxia curvirostra) has an erratic breeding schedule suggesting that breeding is not dependent on daylength. Maturation of the gonads is presumably dependent on availability of suitable food.--From summ.

Williamson, Kenneth. MOULT AND ITS RELATION TO TAXONOMY IN ROCK AND WATER PIPITS. British Birds 58(12): 493-504. Dec. 1965. WR 121: 43

BIRDS--BEHAVIOR & MIGRATION

Abdusalyamov, I. A. [INFORMATION ON THE ECOLOGY OF THE WHITECAPPED WATER REDSTART IN THE PAMIR RANGE.] Ornitologiya (Moscow) 6: 264-267. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 16I184. Transl. of Russian abstr.] WR 121: 43

Armstrong, Joseph T. BREEDING HOME RANGE IN THE NIGHTHAWK AND OTHER BIRDS; ITS EVOLUTIONARY AND ECOLOGICAL SIGNIFICANCE. Ecology 46(5): 619-629, 4 figs. Late summer 1965. WR 121: 43
[Wayne State Univ., Detroit, Mich.]

Bayes, J. C., M. J. Dawson, and G. R. Potts. THE FOOD AND FEEDING BEHAVIOUR OF THE GREAT SKUA IN THE FAROES. Bird Study 11(4): 272-279. Dec. 1964. WR 121: 43
[Univ. Durham, Durham, England.] Summary: Adult great skua feed during the day, especially in early morning and late afternoon. The individual adults do not visit the feeding grounds every day. There is a threefold increase in such visits from the colony when chicks are being fed. Adult kittiwakes and fish formed the main diet of adults and chicks in the Faroes and it is shown that many pairs specialise in their feeding methods, a few concentrating on kittiwake eggs and adult Arctic terns, items which were ignored by the colony as a whole. Other food included carrion, young and adult birds. The known prey of the great skua is extended by the addition of insects eaten by the unfledged young.

Baziev, Zh. Kh., and S. P. Chunikhin. [THE ECOLOGY OF GULDENSTADT'S REDSTART IN KABARDINO-BALKARIA.] Ornitologiya (Moscow) 6: 235-237. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 16I185. Transl. of Russian abstr.] WR 121: 43

Bell, H. L. COMMUNAL NESTING BY THE WHITE-WINGED TRILLER. Emu 65(2): 133-138, 1 fig. Oct. 1965. WR 121: 44
[Taurama Barracks, Port Moresby, New Guinea.] "Lalage sueurii."

Blagosklonov, K. N. [AN EXPERIMENTAL STUDY OF THE NESTING TRACTS OF SMALL BIRDS.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 168-173. 1964. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1964, no. 22I219. Transl. of Russian abstr.] WR 121: 44

Blondel, J. DONNEES ECOLOGIQUES SUR L'AVIFAUNE DES MONTS DES KSOURS (SAHARA SEPTENTRIONAL). [ECOLOGICAL DATA ON THE AVIFAUNA OF THE KSOUR MOUNTAINS (NORTHERN SAHARA).] Terre & Vie 1962(3): 209-251, 2 figs. + 2 pls. July-Sept. 1962. In French. WR 121: 44

Cade, Tom J. RELATIONS BETWEEN RAPTORS AND COLUMBIFORM BIRDS AT A DESERT WATER HOLE. Wilson Bull. 77(4): 340-345. Dec. 1965. WR 121: 44
[Syracuse Univ., Syracuse, N. Y.] The columbiforms have evolved a mechanism of drinking which enables them to take in a sufficient quantity of water in a very short time by sucking, an obvious advantage in reducing exposure to possible predation.... Secondly, in their approach to the water hole none of these columbiform species flies directly to the water to drink but waits first in some relatively protected position nearby to survey the situation.--From summ.

Carr, Thomas, and Coleman J. Goin, Jr. BLUEBIRDS FEEDING MOCKINGBIRD NESTLINGS. Wilson Bull. 77(4): 405-407, 1 fig. Dec. 1965. WR 121: 44
[Gainesville, Fla.] Both sexes of a pair of bluebirds (Sialia sialis) carried food to young mockingbirds (Mimus polyglottos) before and after the mockingbirds had left the nest. The mockingbird nestlings were being attended by their parents which sometimes drove the bluebirds from the nest.

Cleland, J. B. FORK-TAILED SWIFTS IN SOUTH AUSTRALIA BEFORE A CYCLONE. Emu 65(2): 144-148. Oct. 1965. WR 121: 44
[Beaumont, South Adelaide, Australia.]

Denisova, M. N. [FEATURES OF THE FEEDING OF SOME FRINGILLID NESTLINGS.] Uch. Zap. Moskov. Obl. Pedagog. Inst. 126: 77-82. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 20I217. Transl. of Russian abstr.] WR 121: 44

Denisova, M. N. [THE TAXONOMIC SIGNIFICANCE OF FEATURES OF THE DAILY SINGING ACTIVITY OF THRUSHES.] Uch. Zap. Moskov. Obl. Pedagog. Inst. 126: 83-89. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 22I137. Transl. of Russian abstr.] WR 121: 44

Eibl-Eibesfeldt, I. ÜBER DEN WERKZEUGGEBRAUCH DES SPECHTFINKEN CAMARHYNCHUS PALLIDUS. [ON THE USE OF TOOLS BY THE WOODPECKER FINCH CAMARHYNCHUS PALLIDUS.] Z. Tierpsychol. 18: 343-346. 1961. [From Ibis 107(3), 1965. In German.] WR 121: 44
A detailed description of the preparation and use of cactus spines and twigs by the woodpecker finch when hunting for prey.

Faaborg, John, and Dave Bucklin. A STUDY IN THE USE OF BRIDGES AND CULVERTS BY NESTING IOWA BIRDS. Iowa Bird Life 35(3): 78-82. Sept. 1965. WR 121: 44
[705 W. Madison, Jefferson, Iowa.]

Ficken, Millicent S., and Robert W. Ficken. COMPARATIVE ETHOLOGY OF THE CHESTNUT-SIDED WARBLER, YELLOW WARBLER, AND AMERICAN REDSTART. Wilson Bull. 77(4): 363-375. Dec. 1965. WR 121: 44
[Univ. Md., College Park.] Motivation, function, and evolution of song in the chestnut-sided warbler (Dendroica pensylvanica), yellow warbler (D. petechia), and American redstart (Setophaga ruticilla) are discussed.

Fromme, H. G. UNTERSUCHUNGEN ÜBER DAS ORIENTIERUNGSVERMÖGEN NÄCHTLICH ZIEHENDER KLEINVÖGEL (ERITHACUS RUBECULA, SYLVIA COMMUNIS). [INVESTIGATIONS ON THE ORIENTATION OF CAGED NOCTURNAL MIGRANTS (ROBINS AND WHITETHROATS).] Z. Tierpsychol. 18: 205-220. 1961. [From Ibis 107(3), 1965. In German.] WR 121: 45

Grant, P. R. PRELIMINARY EXPERIMENTS ON THE FORAGING OF CLOSELY RELATED SPECIES OF BIRDS. Ecology 47(1): 148-151. Winter 1966. WR 121: 45
[McGill Univ., Montreal, Quebec, Canada.] Abstract: The foraging and interactions of three species of sparrows were studied. Both in the wild and in experiments, Zonotrichia melodia and Z. georgiana foraged similarly and with relatively little interaction. Z. melodia was always dominant to Z. georgiana. A greater degree of interaction occurred between Z. melodia and Z. albicollis. These two species foraged differently, Z. melodia spending more time feeding in the grass than Z. albicollis. The degree of difference in foraging between them remained constant from the first to the second experiment, even though both species fed more in the grass in the latter than in the former. In neither experiment was the difference in foraging caused by interactions between the two species in the experiments. It is suggested that interspecific differences in foraging and interaction are related to the need for avoiding competition.

Hamilton, William J., III, and Gordon H. Orians. EVOLUTION OF BROOD PARASITISM IN ALTRICIAL BIRDS. Condor 67(5): 361-382. Sept.-Oct. 1965. WR 121: 45
[Univ. Calif., Davis.] Nest parasitism may have developed among birds as a result of: females laying eggs in the nests of other species when their own nests were destroyed, accidental laying in the nests of other species, or lack of synchronization of nest building and egg laying.--From summ.

Hamilton-Smith, E. BIRDS IN AUSTRALIAN CAVES. Emu 65(2): 152-155. Oct. 1965. WR 121: 45
[17 Helwig Ave., Montmorency, Victoria, Australia.] Summary: Factors involved in the choice of caves as roosting or nesting sites are discussed. Those birds which enter the dark zone of caves have been shown in some cases to orient themselves by echo-location, and it is suggested that this occurs in the Australian swiftlet, Collocalia francica. Observations of Australian species roosting or nesting in caves are listed.

Harrison, C. J. O., and S. A. Parker. THE BEHAVIOURAL AFFINITIES OF THE BLUE WRENS OF THE GENUS MALURUS. Emu 65(2): 103-113. Oct. 1965. WR 121: 45
[British Museum, Cromwell Rd., London, England.]

Hauser, Doris C., and Mrs. Neill Currie, Jr. HUMMINGBIRD SURVIVES THROUGH DECEMBER IN NORTH CAROLINA. Auk 83(1): 138-139. Jan. 1966. WR 121: 45
[309 Sylvan Rd., Fayetteville, N. C.] A female ruby-throated hummingbird (Archilochus colubris) was observed in N. C. during the period from 3 Dec.-3 Jan. It fed mostly on sugar syrup placed in a vial for its use.

Jabłoński, Bolesław. STUDIES OF THE AUTUMN MIGRATION OF PARUS CAERULEUS L. AND P. MAJOR L. ON THE BALTIC COAST DURING THE PERIOD 1961-1962. Ekologia Polska--Ser. A 13(12): 170-193, 22 figs. 1965. In English with Polish summ. WR 121: 45
[Inst. Zool., Wilcza 64, Warsaw, Poland.] Abstract: In discussing the character of the autumn migration of Parus caeruleus L. and P. major L. over the coast of the Polish Baltic, attention was drawn to the possibility of these species being isolated in time, and to the population differences in the migrating birds.

Johnson, Ned K. DIFFERENTIAL TIMING AND ROUTES OF THE SPRING MIGRATION IN THE HAMMOND FLYCATCHER. Condor 67(5): 423-437, 4 figs. Sept.-Oct. 1965. WR 121: 46
[Univ. Calif., Berkeley.] On timing of migration and migration routes of Hammond flycatchers (Empidonax hammondii).

Klopfer, Peter H. BEHAVIORAL ASPECTS OF HABITAT SELECTION: A PRELIMINARY REPORT ON STEREOTYPY IN FOLIAGE PREFERENCES OF BIRDS. Wilson Bull. 77(4): 376-381, 2 figs. Dec. 1965. WR 121: 46
[Duke Univ., Durham, N. C.]

Krechmar, A. V. [SEASONAL PHENOMENA IN THE LIFE OF THE BIRDS IN THE AREA OF THE NORIL'SK LAKES.] Ornitologiya (Moscow) 6: 37-48. 1963. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1964, no. 18I201. Transl. of Russian abstr.] WR 121: 46

Lebreton, Philippe. INTRODUCTION ECOLOGIQUE A L'ETUDE DE L'AVIFAUNE DE LA DOMBES. [ECOLOGICAL INTRODUCTION TO THE STUDY OF THE AVIFAUNA OF DOMBES.] Terre & Vie 1964(1): 20-53, 1 fig. + 2 pls. Jan.-Mar. 1964. In French. WR 121: 46

Lilja, Ilkka. CALIDRIS-, CROCETHIA- JA LIMICOLA-LAJIEN MUUTTO PORIN EDUSTALLA VV. 1951-60. [THE MIGRATION OF THE GENERA CALIDRIS, CROCETHIA, AND LIMICOLA ON THE COAST NEAR PORI (FINLAND) FROM 1951-60.] Ornis Fennica 41 (3/4): 81-93. 1964. [From Biol. Abstr. 46(16), 1965. In Finnish with German summ.] WR 121: 46

Long, C. A., C. F. Long, J. Knops, and D. H. Matulionis. REPRODUCTION IN THE DICKCISSEL. Wilson Bull. 77(3): 251-256. Sept. 1965. WR 121: 46
[Univ. Ill., Urbana.] Courtship, territoriality, nest building, egg laying, incubation, hatching, predation, development, and behavior of dickcissels (Spiza americana) are discussed.

Malyshev, L. I. [THE SEASONAL BIOLOGY OF THE BIRDS OF THE SOUTHERN BAIKAL FORELAND.] Byll. Vost.-Sibirsk. Fenologicheskoi Komissii 2/3: 7-24. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 16I171. Transl. of Russian abstr.] WR 121: 46

Marysova, I. V. [STUDY OF THE FEEDING HABITS AND PRACTICAL VALUE OF TURDIDAE IN THE UKRAINE.] In: (Information from a study of the natural resources of Podill'.) (Ternopol'-Kremenets). p. 152-157. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 14I196. Transl. of Russian abstr.] WR 121: 46

Mikhel'son, Kh. A. [NATURE OF THE ATTRACTION OF DIFFERENT SPECIES OF SMALL BIRDS THAT NEST IN HOLES OF TREES TO ARTIFICIAL NESTING PLACES.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 128-130. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 14I191. In Russian.] WR 121: 46

Morel, G., and F. Bourlière. RELATIONS ECOLOGIQUES DES AVIFAUNES SEDENTAIRE ET MIGRATRICE DANS UNE SAVANE SAHELIENNE DU BAS SENEGAL. [ECOLOGICAL RELATIONS OF BREEDING AND MIGRATORY BIRDS IN THE SAHELIAN SAVANNAH OF THE LOWER SENEGAL VALLEY.] Terre & Vie 1962(4): 371-393, 2 figs. + 6 pls. Oct.-Dec. 1962. In French with English summ. WR 121: 46
[Station d'Ornithol. de Richard Toll, Sénégal.]

Moriarty, L. J. A STUDY OF THE BREEDING BIOLOGY OF THE CHESTNUT-COLLARED LONGSPUR (CALCARIUS ORNATUS) IN NORTHEASTERN SOUTH DAKOTA. S. Dak. Bird Notes 17(4): 76-79, 1 fig. Dec. 1965. WR 121: 46

Morse, Douglass Hathaway. BIOLOGY OF MIXED FORAGING FLOCKS OF AVIAN SPECIES. Ph.D. thesis, La. State Univ. 188 p. 1965. [From Dissertation Abstr. 26(6), 1965.] WR 121: 47

The ecology and behavior of selected mixed bird flocks were studied, to determine what advantages may be gained from flock participation. Observations were conducted in Louisiana, Maine, and Costa Rica. Several habitats were studied in each region. Special emphasis was placed upon evaluation of already hypothesized ideas of flock function.

Newton, I. BUD-EATING BY BULLFINCHES IN RELATION TO THE NATURAL FOOD-SUPPLY. J. Appl. Ecol. 1(2): 265-279, 2 figs. Nov. 1964. WR 121: 47

[Edward Grey Inst. Field Ornithol., Oxford, England.] In winter, bullfinches probably select the most nutritious food available; they prefer seeds to the buds of fruit trees, and the latter to the buds of hawthorn. In midwinter, captive birds proved unable to maintain themselves on a diet consisting wholly of buds, especially those of hawthorn, and their chance of survival at this time is greater if such a diet can be supplemented by seeds. Hence survival through the winter in a population of bullfinches will probably be highest in years when seeds remain plentiful until late spring; in warm springs, when buds develop more rapidly; and in areas where the larger buds of fruit trees are available. Suggestions are made for reducing damage to fruit buds by bullfinches.--From summ.

Nickell, Walter P. ADAPTIVE BEHAVIOR UNDER HANDICAPS OF SEVERAL SPECIES OF MICHIGAN BIRDS. Wilson Bull. 77(4): 396-400, 2 figs. Dec. 1965. WR 121: 47

[Cranbrook Inst. Sci., Bloomfield Hills, Mich.] Reports observation of missing legs and deformed bills.

Odum, Eugene P., Shirley G. Marshall, and Timothy G. Marples. THE CALORIC CONTENT OF MIGRATING BIRDS. Ecology 46(6): 901-904. Autumn 1965. WR 121: 47

[Univ. Ga., Athens.] Abstract: Determinations of kilocalories per ash-free gram dry weight of 32 individuals of 20 species ranging from exceedingly fat migrants to lean nonmigrant birds revealed the following: 1) Long-range migrants at peak of fat deposition in the fall had a caloric content of 7.9 to 8.3 (mean 8.1) kcal/g ash-free dry weight. 2) Spring arrivals were between 5.7 and 7.4 (mean 7.0). 3) Lean nonmigrants were between 6.0 and 6.9 (mean 6.3). 4) The caloric value of the ash-free nonfat body component was the same for all three groups, averaging about 5.5, indicating that deposition and utilization of fat during migration does not affect the caloric content of the nonfat portion of the bird's body.

Offutt, George C. BEHAVIOR OF THE TUFTED TITMOUSE BEFORE AND DURING THE NESTING SEASON. Wilson Bull. 77(4): 382-387, 1 fig. Dec. 1965. WR 121: 47

[Univ. R. I., Kingston.] Frequencies of calls ranged from 2 to 9.5 kc, with the high frequency calls usually associated with aggressive behavior. The birds fed chiefly on or near the ground. Territories appeared to be stratified with territories overlapping but separated by elevation differences.--From summ.

Perry, Alfred E. THE NESTING OF THE PINE SISKIN IN NEBRASKA. Wilson Bull. 77(3): 243-250, 2 figs. Sept. 1965. WR 121: 47

[Memphis State Univ., Memphis, Tenn.] The following are considered: composition of nests, interspecific relationships, parental care, and growth of young.

Proctor, Vernon W., and Charles R. Malone. FURTHER EVIDENCE OF THE PASSIVE DISPERSAL OF SMALL AQUATIC ORGANISMS VIA THE INTESTINAL TRACT OF BIRDS. Ecology 46(5): 728-729, 1 fig. Late summer 1965. WR 121: 47

[Texas Technol. Coll., Lubbock.] Abstract: Viable disseminules of freshwater algae and crustaceans were recovered from feces of representatives of three orders of birds in addition to waterfowl. This indicates that dispersal of small aquatic organisms via the avian intestinal tract can occur in diverse groups of birds. Because of difference in effects upon the viability of disseminules, some birds are probably better suited as agents of dispersal than others.

Prokof'eva, I. V. [FEATURES OF THE NUTRITION OF THE NESTLINGS OF SMALL FOREST BIRDS.] Uch. Zap. Leningr. Gos. Pedagog. Inst. Imeni A. I. Gertsena 230: 57-69. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 20I216. Transl. of Russian abstr.] WR 121: 48

Prokof'eva, I. V. [SOME FEEDING CHARACTERISTICS OF SMALL FOREST BIRDS.] Uch. Zap. Leningr. Gos. Pedagog. Inst. Imeni A. I. Gertsena 230: 33-56. 1963. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1965, no. 1I164. Transl. of Russian abstr.] WR 121: 48

Rolle, Francis J. DESTRUCTION OF RED-LEGGED THRUSH NEST BY A PEARLY-EYED THRASHER. Auk 82(4): 643. Oct. 1965. WR 121: 48
[Univ. Puerto Rico, Rio Piedras.] A pearly-eyed thrasher (Margarops fuscatus) took for its own nest the material being used by a red-legged thrush (Mimocichla plumbea) and constructed a nest 30 feet away.

Rowley, J. Stuart, and Robert T. Orr. NESTING AND FEEDING HABITS OF THE WHITE-COLLARED SWIFT. Condor 67(6): 449-456, 3 figs. Nov.-Dec. 1965. WR 121: 48
[Calif. Acad. Sci., San Francisco.] Contains discussions on nest sites, nest, eggs, food, and parasites of the white-collared swift (Cypseloides zonaris).

Schmidt-Koenig, Klaus. ÜBER DIE ORIENTIERUNG DER VÖGEL; EXPERIMENTE UND PROBLEME. [ON THE ORIENTATION OF BIRDS; EXPERIMENTS AND PROBLEMS.] Naturwissenschaften 51(18): 423-431, illus., maps. 1964. [From Biol. Abstr. 46(21), 1965. In German.] WR 121: 48
[Zool. Inst., Univ. Gottingen, Gottingen, West Germany.] A survey of the various types of experiments conducted on the orientational abilities of birds.

Seel, D. C. AN ANALYSIS OF THE NEST RECORD CARDS OF THE TREE SPARROW. Bird Study 11(4): 265-271. Dec. 1964. WR 121: 48
[Edward Grey Inst. Field Ornithol., Oxford, England.] Discussion of breeding season, nest sites, clutch size, and nesting success based on records from 1100 nests.

Shuler, James B. DUET SINGING IN THE CAROLINA WREN. Wilson Bull. 77(4): 405. Dec. 1965. WR 121: 48
[43 Kirkwood Lane, Greenville, S. C.] Several instances of male and female Carolina wrens (Thryothorus ludovicianus) singing duets were noted. The song of the female was a "buzzy, rather high-pitched trill."

Spaepen, J., and F. Van Cautern. MIGRATION OF THE SKYLARK, ALAUDA ARVENSIS L. Gerfaut Rev. Belg. Ornithol. 52(2): 275-297, illus., maps. 1962. [From Biol. Abstr. 46(17), 1965.] WR 121: 48

Tomkins, Ivan R. SWALLOW-TAILED KITE AND SNAKE: AN UNUSUAL ENCOUNTER. Wilson Bull. 77(3): 294. Sept. 1965. WR 121: 48
[1231 East 50th St., Savannah, Ga.] A swallow-tailed kite was found still alive with a keeled green snake (Opheodrys aestivus) wrapped around one wing. This hampered the kite so that it was unable to fly.

Verner, Jared. FLIGHT BEHAVIOR OF THE RED-FOOTED BOOBY. Wilson Bull. 77 (3): 229-234, 1 fig. Sept. 1965. WR 121: 48
[Univ. Calif., Berkeley.] Observations on various phases of flight and flocking behavior of the red-footed booby (Sula sula).

Verner, Jared, and Mary F. Willson. THE INFLUENCE OF HABITATS ON MATING SYSTEMS OF NORTH AMERICAN PASSERINE BIRDS. Ecology 47(1): 143-147. Winter 1966. WR 121: 49

[Central Wash. State Coll., Ellensburg.] Abstract: Regardless of sex ratio, a polygynous mating is expected to be adaptive for the female as well as for the male. Two possible selective bases for the evolution of polygyny are considered: 1) One male may make it advantageous to several females to mate with him by appropriating a large share of a limited number of nest sites. 2) When a large share of the food for the young is obtained from the territory, local variations in food availability could influence the mating system. Given a sufficient minimum level of food supply, the difference in food availability between two males' territories may be great enough to permit a female to rear more young on the better territory, unaided by her mate, than she could on the poorer one even with full assistance from her mate. In this case, selection would favor a female pairing with the male on the better territory, even if this meant establishing a polygynous association. Fourteen of 291 species of North American passerine birds have been reported to be regularly polygynous or promiscuous. Thirteen of the 14 breed in marshes, prairies, or savannah-like habitats, where productivity resulting from solar energy is concentrated into a narrow vertical belt; that in a forest is spread unevenly over a broad vertical belt. Thus, the density of productivity--and of avian food sources--is potentially much greater in marshes and prairies than in forests. Hence, marshes and prairies are more likely than forests to present the minimum requisite food supply and sufficiently great differences in available food between territories for selection to favor polygyny.

Vilks, K. A., and E. K. Vilks. [AN EXPERIMENTAL STUDY OF THE TERRITORIAL BEHAVIOR OF TITMICE AND NUTHATCHES.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 174-179. 1964. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1964, no. 22I218. Transl. of Russian abstr.] WR 121: 49

von Frisch, O. AUF JUGENDENTWICKLUNG UND ETHOLOGIE DES STELZENLÄUFERS HIMANTOPUS HIMANTOPUS UND DER BRACHSCHWALBE GLAREOLA PRATINCOLA. [ON THE DEVELOPMENT OF THE YOUNG AND ETHOLOGY OF THE BLACK-WINGED STILT AND THE PRATINCOLE.] Z. Tierpsychol. 18: 67-70. 1961. [From Ibis 107(3), 1965. In German.] WR 121: 49

Watson, Ina. MATING OF SUPERB LYREBIRD, MENURA NOVAE-HOLLANDIAE. Emu 65 (2): 129-132. Oct. 1965. WR 121: 49

[Fisheries & Wildl. Dept., Melbourne, Australia.]

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Abdusalyamov, I. A. [BIRDS OF THE ZERAVSHAN MOUNTAINS.] Akad. Nauk Tadzh. SSR (Dushanbe). 249 p., illus. 1964. Price 1 ruble 47 kopecks. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1964, no. 24I177K. Transl. of Russian abstr.] WR 121: 49

An annotated list on 178 spp. and sspp. of birds.

Benson, C. W., and M. P. Stuart Irwin. SOME BIRDS FROM THE NORTH-WESTERN PROVINCE, ZAMBIA. Arnoldia 1(29): 1-11. 12 Mar. 1965. WR 121: 49

Bochenski, Zygmunt. PTAK: PIENIN. [THE BIRDS OF THE PIENINY MTS. (POLAND).] Acta Zool. Cracoviensia 5(10): 349-445, illus., maps. 1960. [From Biol. Abstr. 46(21), 1965. In Polish with Russian and English summ.] WR 121: 49

Boddam-Whetham, A. D. THE BIRDS OF KIRKLINGTON, O[RANGE] F[REE] S[TATE]. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 32. 35 p. 1965. 30¢. WR 121: 49

Brooke, R. K. NOTES, CHIEFLY DISTRIBUTIONAL, ON SOME BIRDS IN THE KAFUE NATIONAL PARK. Puku 3: 59-65. 1965. WR 121: 50
[Box 8081, Causeway, Rhodesia.]

Chinchaladze, L. M. [INFORMATION ON A STUDY OF THE BIRDS OF LANCHKHUTSK RAION.] Vestnik Gos. Muz. Gruzii 21A: 177-186. 1963. [From Biol. Abstr. 46 (17), 1965, from Referat. Zhur., Biol., 1964, no. 13I179. Transl. of Russian abstr.] WR 121: 50

Dolbik, M. S., U. M. Duchyts, and R. Yu. Tarlyetskaya. [BIRDS OF NORTHERN BELORUSSIA. I. GALLIFORMES, COLUMBIFORMES, RALLIDAE, GRUIFORMES, CHARADRIIFORMES, LARIFORMES, GAVIIFORMES, COLYMBIFORMES, ANSERIFORMES, PELECANIFORMES, CICONIIFORMES, AND PREDATORY BIRDS (ACCIPITRES, FALCONIFORMES).] Vyestsi Akad. Navuk BSSR Syeriya Biol. Navuk 2: 84-98. 1963. [From Biol. Abstr. 46 (16), 1965, from Referat. Zhur., Biol., 1964, no. 13I176. Transl. of Russian abstr.] WR 121: 50

Drozdov, N. N. [DISTRIBUTION AND STRUCTURE OF BIRD POPULATIONS ALONG THE ROADS IN THE SEMI-DESERTS.] Ornitologiya (Moscow) 6: 216-221. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 18I197. Transl. of Russian abstr.] WR 121: 50

Drozdov, N. N. [THE WINTER BIRD POPULATION OF THE MOUNTAIN-FOREST ZONE OF THE NORTHERN AZERBAIDZHAN.] Ornitologiya (Moscow) 6: 246-252. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 13I178. Transl. of Russian abstr.] WR 121: 50

Harris, Bruce K. MORE SPECIMEN RECORDS OF BIRDS UNUSUAL IN NEW MEXICO. Auk 82(4): 648-650. Oct. 1965. WR 121: 50
[1812 Alabama, Silver City, N. Mex.] Occurrence records for 11 spp.

Hissa, Paimo. CENSUSES OF THE NESTING BIRDS OF THE ISLAND LAPPOREN IN BJORKO, W. FINLAND. Ornis Fennica 41(3/4): 69-81. 1964. [From Biol. Abstr. 46(17), 1965.] WR 121: 50
[Univ. Turku, Turku, Finland.]

Holohan, S., and R. J. O'Connor. A DESCRIPTION OF THE VALE OF SHANGANAGH AND ITS BIRDS. Irish Nat. J. 14(12): 287-296. 1964. [From Biol. Abstr. 46 (15), 1965.] WR 121: 50
[100 Pearse Gardens, Dun Laoghaire, Co. Dublin, Ireland.] Following a general description of the vale of Shanganagh, which is located in County Dublin about 9 miles south of the capital, the avifauna of the region is described, with special attention paid to migration and other movements. One hundred and twenty-four spp. are recorded.

Hubbard, John P. THE SUMMER BIRDS OF THE FORESTS OF THE MOGOLLON MOUNTAINS, NEW MEXICO. Condor 67(5): 404-415, 2 figs. Sept.-Oct. 1965. WR 121: 50
[Univ. Mich. Museum Zool., Ann Arbor.] Report on occurrence of 67 spp.

Kenyon, Karl W., and Richard E. Phillips. BIRDS FROM THE PRIBILOF ISLANDS AND VICINITY. Auk 82(4): 624-635, 2 figs. Oct. 1965. WR 121: 50
[Bur. Sport Fisheries & Wildl., Sand Point Naval Air Sta., Seattle, Wash.] Contains information on occurrence of 34 forms.

Kikkawa, J., I. Hore-Lacy, and J. Le Gay Brereton. A PRELIMINARY REPORT ON THE BIRDS OF THE NEW ENGLAND NATIONAL PARK. Emu 65(2): 139-143. Oct. 1965. WR 121: 50
[Univ. New England Exploration Soc., Armidale, New South Wales, Australia.] Status and habitat distribution of 89 spp.

Kurochkin, E. N. [THE ORNITHOGEOGRAPHY OF THE NORTH PACIFIC OCEAN.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 51-56. 1964. [From Biol. Abstr. 56(16), 1965, from Referat. Zhur., Biol., 1964, no. 22I185. Transl. of Russian abstr.] WR 121: 51

Kuzyakin, A. P. [LANDFORM ORNITHOGEOGRAPHY AND ITS OPPOSITE.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 44-50. 1964. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 24I172. Transl. of Russian abstr.] WR 121: 51

Leont'ev, A. N., and E. I. Pavlov. [OBSERVATIONS OF BIRDS IN THE CHIKOYA RIVER VALLEY.] Ornitologiya (Moscow) 6: 165-172. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 13I183. Transl. of Russian abstr.] WR 121: 51

Liversidge, R. THE BIRDS OF THE ADDO NATIONAL PARK. Koedoe 8: 41-67. 1965. WR 121: 51
Summary: The general environment and vegetation of the Addo National Park are given. The avifauna is discussed qualitatively (120 species) in terms of resident species (32) and irregular visitors (45), breeding (31) and migratory species (29). Ecological adaptation especially by fringillids is given. Discussions cover analysis and comparisons of avifauna in relation to habitat, faunistic elements and detailed factors that influence local distribution. A list of species with detailed observation is given.

MacDonald, J. E. A BIRD CENSUS IN RED PINE PLANTATIONS AND MIXED STANDS IN KIRKWOOD TOWNSHIP, ONTARIO. Canadian Field-Nat. 79(1): 21-25, 1 fig. Jan.-Mar. 1965. WR 121: 51
[Forest Insect Lab., Sault Ste. Marie, Ontario, Canada.] Summary: The species and numbers of birds nesting in red pine Pinus resinosa plantations in Kirkwood Township, Ontario, was small compared with populations in adjacent mixed stands. Finches were most numerous in the red pine stands, with vesper sparrows, chipping sparrows, and slate-colored juncos predominating. Few birds nested in red pine stands with closed canopies and sparse ground cover.

Monroe, Burt Leavelle, Jr. A DISTRIBUTIONAL SURVEY OF THE BIRDS OF HONDURAS. Ph.D. thesis, La. State Univ. 1032 p. 1965. [From Dissertation Abstr. 26(6), 1965.] WR 121: 51
Migrational movements of Honduran species are discussed. Of the 670 species occurring in the country, 178 are known to be migratory. Six species and two subspecies of other species are summer residents only in Honduras, wintering to the south of the republic. The remaining migrants are transient through the country or are visitants, including at least one that migrates north from South America during the Southern Hemisphere winter. In the text of each species account, information is given concerning the Honduran status of the species, relative abundance, seasonal occurrence, habitat preference, altitudinal range, geographic distribution within the republic, additional specimen and breeding data of importance, taxonomic problems, and geographic and subspecific variation.

Novikov, G. A., A. S. Mal'chevskii, N. P. Ovchinnikova, and N. S. Ivanova. [BIRDS OF THE "FOREST ON THE VORSKLA" AND ITS VICINITY.] In: (Problems of ecology and biocoenology.) Leningr. Univ. (Leningrad). p. 9-118. 1963. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 16I170. Transl. of Russian abstr.] WR 121: 51
Information is given on the ecology of 148 spp. of birds.

Pike, E. O. THE BIRDS OF KOBONQABA, TRANSKEI. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 24. 22 p. 1965. Price 25¢. WR 121: 51

Priezzhev, G. P. [INFORMATION ON THE NUMBER AND DISTRIBUTION BY BIOTOPE OF SMALL PERCHING BIRDS OF THE VOLGA FLOODPLAIN.] In: (Natural resources of the Volga-Kama area. Animal world.) Nauka (Moscow). p. 92-97. 1964. [From Biol. Abstr. 46(15), 1965, from Referat. Zhur., Biol., 1964, no. 22I210. Transl. of Russian abstr.] WR 121: 52

Robinson, Thane S. A PRELIMINARY LIST OF THE BREEDING BIRDS OF THE LOWER CUMBERLAND RIVER VALLEY. Ky. Warbler 41(4): 59-62. Nov. 1965. WR 121: 52
[Univ. Louisville, Louisville, Ky.]

Ruwet, Jean-Claude. ASPECTS DE LA VIE ORNITHOLOGIQUE AU LAC DE RETENUE DE LA LUFIRA (KATANGA). [THE ORNITHOLOGIC LIFE ON LAKE RETENUE OF THE LUFIRA (KATANGA).] Gerfaut Rev. Belg. Ornithol. 52(2): 448-456. 1962. [From Biol. Abstr. 46(15), 1965. In French.] WR 121: 52
[Univ. Liege, Inst. Zool., Liege, Belgium.]

Schwartz, Albert, and Ronald F. Klinikowski. ADDITIONAL OBSERVATIONS ON WEST INDIAN BIRDS. Notulae Nat. (Philadelphia) 376: 1-16. 1965. [From Biol. Abstr. 46(18), 1965.] WR 121: 52
[10000 S.W. 84th St., Miami, Fla.] Field notes on over 50 spp. and sspp.

Skead, C. J. REPORT ON THE BIRD-LIFE IN THE MOUNTAIN ZEBRA NATIONAL PARK, CRADOCK, C.P. 1962-1964. Koedoe 8: 1-40 + 14 [plates]. 1965. WR 121: 52
The Mountain Zebra National Park, Cradock, contains about 146 regular species (16 migratory) of birds, a number likely to be increased to 190-200 when vagrants are enumerated in future.--From summ.

Skead, David M. A REVISED LIST OF THE BIRDS OF THE BLOEMHOF DISTRICT. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 26. 32 p. 1965. Price 30¢. WR 121: 52
[Transvaal Dept. Nat. Conserv., Bloemhof.] A listing of 248 spp.

Sladen, William J. L. ADDITIONS TO THE AVIFAUNA OF THE PRIBILOF ISLANDS, ALASKA, INCLUDING FIVE SPECIES NEW TO NORTH AMERICA. Auk 83(1): 130-135. Jan. 1966. WR 121: 52
[Johns Hopkins Univ., 615 N. Wolfe St., Baltimore, Md.] With notes on 22 spp.

White, C. M. N. A REVISED CHECK LIST OF AFRICAN NON-PASSERINE BIRDS. Government Printer (Lusaka). v + 299 p. 1965. Price 10 shillings. WR 121: 52
"This completes the revised list of the birds of Africa south of the Sahara."

Whitney, N. R. CHECK-LIST OF SOUTH DAKOTA BIRDS. S. Dak. Bird Notes 17(4): 80-83. Dec. 1965. WR 121: 52

Winterbottom, J. M. A PRELIMINARY LIST OF THE BIRDS OF SOUTH WEST AFRICA. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 25. 38 p. 1965. Price 40¢. WR 121: 52
A listing of 522 spp.

Winterbottom, J. M. A PRELIMINARY LIST OF THE BIRDS OF HOPETOWN DISTRICT. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 27. 15 p. 1965. Price 25¢. WR 121: 52

Yudin, K. A. [THE BIRD FAUNA OF THE CENTRAL PART OF THE ARCTIC BASIN.] Trudy Arkticheskogo Antarkt. Nauch.-Issled. Inst. 259: 400-403. 1964. [From Biol. Abstr. 46(21), 1965, from Referat. Zhur., Biol., 1964, no. 20I131. Transl. of Russian abstr.] WR 121: 52

Zimin, A. B. [THE SPECIES COMPOSITION AND NUMBER OF THE BIRDS OF THE UPLAND OAK FORESTS OF THE CHUVASH ASSR.] In: (The natural resources of the Volga-Kama region. Animal world.) Nauka (Moscow). p. 97-102. 1964. [From Biol. Abstr. 46(15), 1965, from Referat. Zhur., Biol., 1964, no. 22I211. Transl. of Russian abstr.] WR 121: 53

BIRDS--POPULATIONS & FLUCTUATIONS

Huble, Jan. THE POPULATION DENSITY OF GREAT AND BLUE TITS IN 2 MUNICIPAL PARKS [BELGIUM] (1958-1961). Gerfaut Rev. Belg. Ornithol. 52(2): 344-352, illus. 1962. [From Biol. Abstr. 46(17), 1965. In English with Flemish and French summ.] WR 121: 53

King, James R., Donald S. Farner, and L. Richard Mewaldt. SEASONAL SEX AND AGE RATIOS IN POPULATIONS OF THE WHITE-CROWNED SPARROWS OF THE RACE GAMBELII. Condor 67(6): 489-504, 5 figs. Nov.-Dec. 1965. WR 121: 53
[Wash. State Univ., Pullman.]

Rappe, A., and P. Herroelen. L'INVASION DE LOXIA CURVIROSTRA EN 1962 EN BELGIQUE. [THE INVASION OF LOXIA CURVIROSTRA IN 1962 IN BELGIUM.] Gerfaut Rev. Belg. Ornithol. 54(1/2): 3-11. 1964. [From Biol. Abstr. 46(18), 1965. In French with Dutch summ.] WR 121: 53

Ricklefs, Robert E. BROOD REDUCTION IN THE CURVE-BILLED THRASHER. Condor 67(6): 505-510, 4 figs. Nov.-Dec. 1965. WR 121: 53
[Univ. Pa., Philadelphia.] A general discussion is given of two strategies of adjusting brood size to correspond to food availability: evaluation and brood reduction. The evaluation strategy of adjusting clutch size is useful when the availability of food at the time that nestlings are being fed can be predicted with reasonable accuracy from an evaluation of the food availability, or other environmental conditions, prior to egg laying. Brood reduction is advantageous when the food supply is unstable and its fluctuations are unpredictable, or when the eggs are laid before the female can meaningfully evaluate the season's food availability.--From summ.

Ryabov, V. F. [THE NATURE AND TRENDS OF SOME CHANGES IN THE AVIFAUNA OF NORTHERN KAZAKHSTAN.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 67-74. 1964. [From Biol. Abstr. 46(15), 1965, from Referat. Zhur., Biol., 1964, no. 22I180. Transl. of Russian abstr.] WR 121: 53

Snow, D. W. THE RELATIONSHIP BETWEEN CENSUS RESULTS AND THE BREEDING POPULATION OF BIRDS ON FARMLAND. Bird Study 12(4): 287-304. Dec. 1965. WR 121: 53
The results are given of field work designed to test the accuracy of the methods used in the Common Birds Census. Two independent censuses were made on each of four farmland areas, and on two of the areas a high proportion of all the nests were found. The results showed that for most species a census of 8 visits gave an estimate of the population which averaged 60-70 per cent of the estimate derived from the combined census of twice as many visits. For some species, however, considerably better than the average percentages could be achieved. Although the accuracy of the Common Birds Census results could be improved by altering the field methods in present use, there are strong practical and theoretical arguments against doing so, of which the chief one is that the Census is already producing valid results for annual comparisons and any change would tend to invalidate such comparisons.--From summ.

Southern, H. N. DISTRIBUTION OF BRIDLED GUILLEMOTS IN EAST SCOTLAND OVER EIGHT YEARS. J. Animal Ecol. 35(1): 1-11, 1 fig. Feb. 1966. WR 121: 53
[Oxford Univ., Oxford, England.]

Taylor, S. M. THE COMMON BIRDS CENSUS--SOME STATISTICAL ASPECTS. Bird Study 12(4): 268-286. Dec. 1965. WR 121: 54

Summary: The conditions necessary for the construction of a valid population index are stated, and the extent to which the Common Birds Census data on the 22 commonest farmland species comply with them is investigated. It is shown that the year-to-year consistency of observers' standards is adequate. Plots first censused in 1963 are compared with those first censused earlier, and the two groups are shown to be consistent as regards year-to-year changes, except for a small bias which could only be detected when the evidence from all 22 species was combined. The two groups also differ in the extent to which certain species are represented in them, but this does not affect estimates of annual change. The main changes in technique which have been made as the Census developed are briefly reviewed. Their effects cannot be inferred from the data but are probably not great. It is important that techniques should be kept as constant as possible now that the Census on farmland has grown to an adequate size. The problems involved in extending the Census findings to make general inferences have been touched on, and overall estimates of the changes from 1963 to 1964 have been presented. The only species to show a decrease is the Common Partridge.

Williamson, Kenneth, and R. C. Homes. METHODS AND PRELIMINARY RESULTS OF THE COMMON BIRDS CENSUS, 1962-63. Bird Study 11(4): 240-256. Dec. 1964. WR 121: 54

A discussion of the methods and some of the results of a cooperative breeding bird census started in 1961, chiefly involving farmland. The data indicate that population declines occurred among several sedentary species between the breeding seasons of 1962 and 1963. The decline was thought to have been caused by the unusually severe and protracted winter weather during Jan.-Mar. 1963.

BIRDS--ECONOMICS, CONTROL, MORTALITY

Anderson, Daniel W. SPRING MORTALITY IN INSECTIVOROUS BIRDS. Loon (formerly the Flicker) 37(4): 134-135, 2 figs. Dec. 1965. WR 121: 54

[Univ. Wis., Madison.] Cliff, bank, tree and barn swallows, flycatchers, eastern kingbirds and warblers were affected by a cold snap in Minn. during late May 1965.

Clark, L. R. PREDATION BY BIRDS IN RELATION TO THE POPULATION DENSITY OF CARDIASPINA ALBITEXTURA (PSYLLIDAE). Australian J. Zool. 12(3): 349-361, illus. 1964. [From Biol. Abstr. 46(15), 1965.] WR 121: 54

[Div. Entomol., CSIRO, Canberra, Australia.]

Herroelen, P., and A. Rappe. LES OISEAUX EN BELGIQUE PENDANT LE RIGOUREUX HIVER 1962-1963. [BIRDS IN BELGIUM DURING THE RIGOROUS WINTER 1962-1963.] Gerfaut Rev. Belg. Ornithol. 54(1/2): 35-76, illus., maps. 1964. [From Biol. Abstr. 46(18), 1965. In French.] WR 121: 54

Klitin, O. M. [BENEFICIAL BIRDS OF SOVIET BUKOVINA.] In: (Information from a study of the natural resources of Podolia.) (Ternopol'-Kremenets). p. 145-146. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 14I194. Transl. of Russian abstr.] WR 121: 54

Nazarenko, L. F., I. H. Hurs'kyi, and M. F. Popova. [DISTRIBUTION OF FOREST BIRDS IN THE DNESTER RIVER VALLEY IN THE BLACK SEA STEPPE AND THEIR ROLE IN THE DESTRUCTION OF PESTS.] In: (Information from a study of the natural resources of Podolia.) (Ternopol'-Kremenets). p. 162-163. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 13I190. In Russian.] WR 121: 54

Steirly, C. C. ROLE OF WOODPECKERS IN THE CONTROL OF SOUTHERN PINE BEETLES IN VIRGINIA. Raven 36(3): 55-59. Sept. 1965. WR 121: 55
[District Forester, Waverly, Va.] "In general it might be said that the combined effect of biological factors (including woodpeckers in the front rank), climatic factors, and the control efforts of professional foresters have at least prevented millions of dollars of timber losses without resorting to dangerous chemicals."

BIRDS--PARASITES AND DISEASES

Ash, J. S., and G. I. Sharpe. POST-MORTEM AND PESTICIDE EXAMINATIONS OF BIRDS IN THE COLD SPELL OF 1963. Bird Study 11(4): 227-239. Dec. 1964. WR 121: 55
[Game Res. Assoc., Fordingbridge, Hampshire, England.] Summary: Over 200 birds from about 350 of 46 species found dead in the cold spell of December 1962-March 1963, were examined for disease and endoparasites. Of the 210 birds examined for disease, only three showed a pathological condition; the endoparasites recorded are listed and discussed. A sample of 19 bodies was analysed and all contained pesticide residues. In three (great crested grebe, heron and song thrush) residues were probably high enough to have been in themselves the cause of death. Four others contained "marginally toxic" residues. It is suggested that birds containing such residues are more likely to succumb in adverse environmental conditions than those without residues.

Canaris, Albert G. OCCURRENCE OF COLLYRICLUM FABA (TREMATODA) IN A VARIED THRUSH WITH A NOTE ON A SINGLE BIRD'S INTERNAL PARASITES. Auk 83(1): 139. Jan. 1966. WR 121: 55
[W. Va. Univ., Morgantown.] In addition to 10 Collyriclum faba, a varied thrush (Ixoreus naevius) contained 10 Brachylaime pellucidum, 12 Lutztrema monenteron, 25 Leucochloridium sp., 13 tapeworms, and 1 Acanthocephalan.

Hoogstraal, Harry. ECTOPARASITES (ACARINA) OF MIGRATING BIRDS AND THEIR DISEASE RELATIONSHIPS. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 417. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 55
[U. S. Nav. Med. Res. Unit No. 3, Am. Embassy, Cairo, Egypt.] Abstract only.

McIntosh, B. M. CORRELATION BETWEEN BIRD MOVEMENTS AND DISEASE (ACARINA, DIPTERA, MAN). Pacific Sci. Congr. Abstr. Symp. Pap. 10: 419. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 55
[S. Afr. Inst. Med. Res., Johannesburg, South Africa.] Abstract only.

Reeves, William C. CURRENT STATUS OF KNOWLEDGE ON THE SIGNIFICANCE OF LATENT VIRUS INFECTIONS IN AVIAN HOSTS OF ARTHROPOD-BORNE VIRUSES. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 420. 1961. [From Biol. Abstr. 46(17), 1965.] WR 121: 55
[Sch. Public Health, Univ. Calif., Berkeley.] Abstract only.

Stamm, Donald D. RELATIONSHIPS OF BIRDS AND ARBOVIRUSES. Auk 83(1): 84-97. Jan. 1966. WR 121: 55
A review of the relationship of birds and arboviruses. Illustrations are given of the impact of epidemics of arbovirus disease on human communities, and suggestions are given on some ornithological information needed by virologists and epidemiologists.

GAME BIRDS--GENERAL

Rodionov, M. A. [A COMPARATIVE ECOLOGICAL SURVEY OF THE GALLIFORMES OF THE NORTHWESTERN ZONE OF THE EUROPEAN PART OF THE USSR.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 169-172. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 14I141. In Russian.] WR 121: 56

Sabater Pi, Jorge. PHASIDUS NIGER (CASSIN) UN AVE GALLIFORME DE RIO MUNI, POCO CONOCIDA. [PHASIDUS NIGER [ECOLOGY, STRUCTURE] (CASSIN). A LITTLE KNOWN GALLIFORM BIRD OF RIO MUNI (SPANISH GUINEA).] Mens. Boletin Inform. Fed. Iberoamer. Parques Zool. 2: 10-11, illus. 1963. [From Biol. Abstr. 46(16), 1965. In Spanish.] WR 121: 56

Vinogradov, V. V. [THE OVERWINTERING OF GAME BIRDS ON THE AKHGEL' LAKES IN AZERBAIDZHAN.] Ornitologiya (Moscow) 6: 466-468. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 12I311. Transl. of Russian abstr.] WR 121: 56

QUAIL

Edwards, William R. EVALUATION OF QUAIL HUNTING ON PUBLIC AND PRIVATE AREAS. Game Res. Ohio 3: 38-50. July 1965. WR 121: 56

[Ill. Nat. Hist. Surv., Urbana.] An analysis of available data on the status of bobwhite quail (Colinus virginianus mexicanus) populations in Ohio and their response to limited hunting. Also included is a discussion of the pertinent findings on two surveys of farmer attitude. It was concluded that quail population densities are primarily controlled by factors of the physical environment and that there is no biological or sociological reason why a statewide quail hunting season should not be implemented.--From abstr.

Francis, William J. DOUBLE BROODS IN CALIFORNIA QUAIL. Condor 67(6): 541-542. Nov.-Dec. 1965. WR 121: 56

[Museum Vertebrate Zool., Berkeley, Calif.] Two female Calif. quail hatched two broods during one season. Females remained only about two weeks with young of the first broods and then left care of the first broods to the males, found other males and started second nestings.

Hendrickx, Andrew G., and Robert Hanzlik. DEVELOPMENTAL STAGES OF THE BOB-WHITE QUAIL EMBRYO (COLINUS VIRGINIANUS). Biol. Bull. 129(3): 523-531, 2 pls. Dec. 1965. WR 121: 56

[Southwest Foundation Res. & Education, San Antonio, Texas.]

Prsad, Prem Shankar. MANAGEMENT OF WILDLIFE IN CAPTIVITY: EXPERIMENTAL ATHEROSCLEROSIS IN GROUP AND SOCIALLY ISOLATED JAPANESE QUAIL (COTURNIX COTURNIX JAPONICA). Ph.D. thesis, Mich. State Univ. 148 p. 1965. [From Dissertation Abstr. 26(8), 1966.] WR 121: 56

PHEASANTS

Burger, George V. OBSERVATIONS ON AGGRESSIVE BEHAVIOR OF MALE RING-NECKED PHEASANTS IN WISCONSIN. J. Wildl. Mgmt. 30(1): 57-64. Jan. 1966. WR 121: 56

[Remington Farms, Chestertown, Md.] Abstract: The locations of crowing cock pheasants (Phasianus colchicus) were mapped during sunrise crowing periods on a 1,100-acre study area, establishing population estimates of 51 cocks in 1956 and 79 in 1957. Some cocks began crowing in late February; most were crowing by mid-April and had ceased by the end of June. Sixty-three mapped territories ranged in size from 1.2 to 9.8 acres. A significantly lower mean territory size in 1957 was attributed to increased population density. Territory boundaries were well defined, probably as a result of population density, and shifts that occurred were clearly oriented in time and space. Open ground appeared to be a requisite for territories, and there was a preference for well-interspersed cover. The occurrence of nonterritorial males was associated with higher population densities. Non-territorial cocks are distinguished from unmated cocks.

Chambers, Glenn D., Kenneth C. Sadler, and Robert P. Breitenbach. EFFECTS OF DIETARY CALCIUM LEVELS ON EGG PRODUCTION AND BONE STRUCTURE OF PHEASANTS. J. Wildl. Mgmt. 30(1): 65-73, 1 fig. Jan. 1966. WR 121: 57
[Mo. Dept. Conserv., Columbia.] Abstract: Captive pheasant (Phasianus colchicus) hens fed various levels of calcium produced more eggs when the amount of calcium in the diet was increased. Birds on high calcium diets would have been able to produce two adequate sized clutches of eggs; birds which had received very little dietary calcium (0.5 percent) could not have produced two clutches. The amounts of calcium, phosphorus, and ash found in femurs varied little between birds fed different levels of calcium. Osteoporosis was detected in female pheasants fed low levels of calcium. Femurs of these birds had enlarged haversian canal systems, as shown by total space occupied by canals, mean canal size, and the amount of cortex present. Bones of birds fed 0.5 percent and 3.2 percent calcium were significantly different in these respects; inconclusive data were obtained from birds fed intermediate levels of calcium. Cocks on low calcium diets showed some evidence of osteoporosis; those receiving adequate calcium showed none. Recent studies have shown that pheasants can select calcium grits when unusual needs arise; thus pheasants might get enough calcium during the breeding season even in low-calcium habitat. To determine whether calcium supplies are adequate it is suggested that breeding females from areas of low populations be examined for evidence of osteoporosis.

Gates, John M. VALIDITY OF SPUR APPEARANCE AS AN AGE CRITERION IN THE PHEASANT. J. Wildl. Mgmt. 30(1): 81-85, 1 fig. Jan. 1966. WR 121: 57
[Wis. Conserv. Dept., Waupun.] Abstract: The reliability of age determination based on spur appearance in the pheasant (Phasianus colchicus) was investigated by (1) comparing results of the spur method with the bursal method and (2) testing with known-age spurs biologists experienced in using the spur method. Errors in age determination with the spur method in Wisconsin averaged 20 percent in adult pheasants and 1 percent in juveniles. In known-age spur tests, in which the actual age ratio represented was 3.9 juveniles per adult, results of 22 biologists varied between 1.8 and 9.8 juveniles per adult. An important drawback to the spur-appearance technique is that it is based on subjective criteria, which individuals interpret so differently that the results obtained may be highly divergent. Age ratios should therefore be obtained by the bursal method whenever possible, and extreme caution should be used in interpreting age ratios based on spur collections.

Holcomb, Larry C. FACTORS AFFECTING NESTING SUCCESS OF RING-NECKED PHEASANTS. Wilson Bull. 77(3): 290-293. Sept. 1965. WR 121: 57
[Midland Coll., Fremont, Nebr.] Of 11 ring-necked pheasant (Phasianus colchicus) nests checked daily, three were successful. Causes of nesting failure were determined to be behavioral conflicts, rainstorms and predation.

Lyon, David Louis. RELATIONSHIP OF PHEASANT POPULATIONS AND SOILS IN CENTRAL IOWA. Ph.D. thesis, Iowa State Univ. Sci. & Technol. 238 p. 1965. [From Dissertation Abstr. 26(6), 1965.] WR 121: 57
There appeared to be a relationship between density of pheasant populations in central Iowa and the edge of the Altamont moraine of the Wisconsin period of glaciation, with greater pheasant densities occurring north of the margin and lower densities south of the margin.

Martinson, R. K., and C. R. Grondahl. WEATHER AND PHEASANT POPULATIONS IN SOUTHWESTERN NORTH DAKOTA. J. Wildl. Mgmt. 30(1): 74-81, 4 figs. Jan. 1966. WR 121: 57
[Migratory Bird Populations Sta., Laurel, Md.] Abstract: High productivity and survival of ring-necked pheasants (Phasianus colchicus) were correlated with high rainfall and cool temperatures in May and June during an 8-year period in southwestern North Dakota. These findings differed markedly from those of several earlier studies in the less arid midwestern United States

where cool, wet weather in the spring generally affected pheasant populations adversely. General trends in the pheasant population could be explained on the basis of precipitation in May and June. The population was relatively high during the mid-1950's when wet and dry May and June periods occurred in alternate years but declined markedly after 2 consecutive years of spring and summer drought. The population remained at a static low during 1960 through 1963 when wet and dry spring and summer periods again occurred alternately.

Nagra, Clarence L., Robert P. Breitenbach, and Roland K. Meyer. RELATION OF CASTRATION TO FAT STORES IN MALE PHEASANTS. Ecology 46(5): 741-744, 4 figs. Late summer 1965. WR 121: 58

[Wyeth Labs., Radnor, Pa.] Abstract: During 1958 and 1959 we studied the effect of castration on lipids in male gamefarm pheasants confined to outdoor pens. In both years the visceral fat stores of control birds decreased from January to June and then increased. Among the orchidectomized pheasants, visceral fat was minimum from February to April 1958 and maximum thereafter, but did not change seasonally in 1959. Liver and plasma lipid showed no regular periodicity and were not associated with levels of visceral fat nor influenced by castration. The weight of the adrenals in intact pheasants increased 20% from February to June 1958 and then decreased. During 1959 the adrenals of these birds weighed most in April, when they were 30% heavier than in January; subsequently they involuted. In 1958 the seasonal pattern of adrenal weight in gonadectomized pheasants was opposite to that of controls, whereas in 1959 the pattern was like that of intact birds. Thyroid weight was stable seasonally.

Seibert, Henri C. FOOD OF FERAL REEVES PHEASANTS. Game Res. Ohio 3: 55-61, 1 fig. July 1965. WR 121: 58

[Ohio Univ., Athens.] Abstract: Analyses of the crop and gizzard contents of Reeves pheasants (Syrmaticus reevesii) released in the wild show that they are granivorous, frugivorous, and seasonally insectivorous. Preferred items are Rubus sp., cherries, wheat, and grasses. Most of the plants are ruderals. Information derived from field observations and literature sources is included.

GROUSE, PARTRIDGE, ETC.

Bergerud, Arthur T., and W. Eugene Mercer. CENSUS OF THE WILLOW PTARMIGAN IN NEWFOUNDLAND. J. Wildl. Mgmt. 30(1): 101-113, 7 figs. Jan. 1966. WR 121: 58

[Dept. Mines, Agr. & Resources, St. John's, Newfoundland.] Abstract: The accuracy of direct counts, the King strip census, the Lincoln index, and a becking census were tested for willow ptarmigan (Lagopus lagopus alleni) in a 2.6-square-mile study area on Brunette Island, Newfoundland, from 1962-65. In 1962 a minimum direct count was made of a dense population by totaling (1) birds killed in the summer and fall, (2) birds dying in winter, and (3) birds still alive in spring 1963. Compared to this statistic the King census and Lincoln index based on the hunter kill gave satisfactory results, while a Lincoln index based on July and August observations greatly underestimated the population. Direct counts in 1963, 1964, and 1965 were believed to estimate the true population within 5 percent. Compared to these counts the Lincoln index provided reliable statistics; the King census was accurate in 1964, but overestimated the population in 1963 and underestimated it in 1965. The becking count was accurate in 1965 and underestimated the cocks in 1963 and 1964. A further test of these techniques plus an aerial census trial on the Avalon Peninsula suggested that the becking and aerial counts were sufficiently accurate for management purposes on the mainland of Newfoundland.

Blus, Lawrence J. ACCIDENTAL DESTRUCTION OF GREATER PRAIRIE CHICKEN EGGS. Auk 82(4): 651. Oct. 1965. WR 121: 58

[Nebr. Game, Forestation & Parks Comm., Thedford.] Ten of 13 eggs were cracked as a result of the bird being repeatedly flushed from its nest.

Brander, Robert Bruce. FACTORS AFFECTING DISPERSION OF RUFFED GROUSE DURING LATE WINTER AND SPRING ON THE CLOQUET FOREST RESEARCH CENTER, MINNESOTA. Ph.D. thesis, Univ. Minn. 192 p. 1965. [From Dissertation Abstr. 26(8), 1966.] WR 121: 59

Studies of 13 Bonasa umbellus equipped with 20-gram radio transmitter packages indicated that some management precepts must be re-evaluated on the basis of the findings. Among these are the strip "census" or King method of inventory for ruffed grouse, roadside drumming counts as a spring inventory method, and the concept of winter cover.

Cade, Tom J., Ernest J. Willoughby, and Gordon L. Maclean. DRINKING BEHAVIOR OF SANDGROUSE IN THE NAMIB AND KALAHARI DESERTS, AFRICA. Auk 83(1): 124-126. Jan. 1966. WR 121: 59

[Syracuse Univ., Syracuse, N. Y.] Contrary to statements in the literature, at least three species of Pteroclidae do not drink by a sucking mechanism as do Columbiformes, but rather they dip their bills into the water and raise their heads while swallowing the water.

Cebula, Jerome J. TRANSISTORIZED TYMPANUCHUS. Kans. Fish & Game 23(1): 3-5, illus. 1966. WR 121: 59

Informative, interesting popular account of movement and habit studies of radio-tagged prairie chickens in Kans.

Chervonnyi, V. [STAGES IN THE COURTING DANCE OF THE BLACK GROUSE AND CAPERCAILLIE.] Okhota & Okhotnich'e Khoz. 5: 22-23, illus. 1964. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 21I170. Transl. of Russian abstr.] WR 121: 59

Chunikhin, S. [THE CAUCASIAN BLACK GROUSE (LYRURUS MLOKOSIEWICZI TACZ.).] Okhota & Okhotnich'e Khoz. 8: 22-23. 1964. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1965, no. 1I136. Transl. of Russian abstr.] WR 121: 59

General description of the bird; its habitat; mating call (at the place where the mating call is given there may be as many as 20 males); information about the biology of nesting (a large number of nestlings died: in the first 10 days of July 4-6 in each brood and in Aug. 1-4 nestlings); moulting; food; total numbers; and hunting.

Dolbik, M. [FEMALE LYRURUS SITTING ON ADDLE-EGGS.] Okhota & Okhotnich'e Khoz. 8: 24-25. 1964. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1965, no. 1I137. Transl. of Russian abstr.] WR 121: 59

Donohoe, Robert W. GROUSE DRUMMING CENSUS STUDY. Game Res. Ohio 3: 51-55, 2 figs. July 1965. WR 121: 59

[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Spring drumming censuses of Bonasa umbellus in Raccoon State Forest for the period 1958-1964 are summarized. Five hundred and seventy-two drums were recorded and 29 cocks were located in the sampling circles during the entire study. The most active period of drumming activity, for all years combined, was April 15-20. The data suggest that the drumming census alone is not a valid method for determining ruffed grouse density, due to the variability between numbers of drums heard and known cocks in the sampling circles.--From abstr.

Evans, Keith. OBSERVATIONS ON A HYBRID BETWEEN THE SHARP-TAILED GROUSE AND THE GREATER PRAIRIE CHICKEN. Auk 83(1): 128-129, 1 fig. Jan. 1966. WR 121: 59

[Rocky Mountain Forest & Range Expt. Sta., Fort Collins, Colo.] On physical features and behavior of a male hybrid of Pedioecetes phasianellus jamesi and Tympanuchus cupido pinnatus.

Gavrin, V. [CAPERCAILLIE COURTSHIP.] Okhota & Okhotnich'e Khoz. 4: 18-20. 1964. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 21I169. Transl. of Russian abstr.] WR 121: 59

Jenkins, David, Adam Watson, and G. R. Miller. PREDATION AND RED GROUSE POPULATIONS. J. Appl. Ecol. 1(1): 183-195, 4 figs. May 1964. WR 121: 60

It is concluded that the frequency of visits by predators to this habitat was partly determined by the availability of dispersing grouse as prey and partly by other factors that are not understood. Except locally and seasonally, gamekeepers did not seem to depress the numbers of predators; and predation was not important in limiting either the numbers of breeding grouse or the numbers available subsequently for shooting.--From summ.

Korenberg, E. I., A. A. Pchelkina, Yu. V. Kovalevskii, and L. G. Suvorova. [SPECIFIC IMMUNIZATION FEATURES OF TETRAONIDAE IN A NATURAL FOCUS OF TICK-BORNE ENCEPHALITIS.] Med. Parazitol. Parazitarn. Bolezni 33(6): 711-717, illus., map. 1964. [From Biol. Abstr. 46(21), 1965. In Russian with English summ.] WR 121: 60

[N. F. Gamaleya Inst. Epidemiol. Microbiol., Acad. Med. Sci. USSR, Moscow, USSR.] "Lyrurus tetrix, Tetrastes bonasia, and Tetrao urogallus."

Korschgen, L. J. FOODS AND NUTRITION OF RUFFED GROUSE IN MISSOURI. J. Wildl. Mgmt. 30(1): 86-100. Jan. 1966. WR 121: 60

[Mo. Dept. Conserv., Columbia.] Abstract: In efforts to reestablish the ruffed grouse (Bonasa umbellus) in Missouri, three experimental areas were recently stocked with wild birds trapped in Ohio and Indiana: Ashland Wildlife Research Area, Boone County; Daniel Boone State Forest, Warren County; and Carman Spring Refuge, Howell County. Seven thousand samples of droppings collected in all months, February, 1961-September, 1964, were analyzed to learn principal foods and native plants that might be managed to benefit grouse under Missouri conditions. Plant foods of 111 kinds, or groups, and 33 animal foods were identified. Diet and degree of utilization of foods varied greatly by season and year. Principal foods in decreasing order of volume were: unidentified green leaf materials, hop hornbeam, acorns, wild grapes, tick trefoils, Japanese (multiflora) rose, ladies' tobacco, fragrant sumac, bittersweet, bush clovers, Korean lespedeza, hazelnut, Christmas fern, and sedges. No animal food was important in the year-round diet. Nutritional analyses based upon food composition and volume percentages in the diet showed that body building protein (15.5 percent) was taken in greatest amount during summer, fat (6.4 percent) and carbohydrates (71.5 percent) as fat and energy producing compounds were taken most in winter, and the largest mineral amounts (6.6 percent) were taken during the summer period of production, growth, and development. Selection of quality foods to meet bodily needs was indicated. Approximately 15 percent, by volume, of all foods was furnished by high canopy trees, 45 percent by understory trees, shrubs, vines, and brambles, and 40 percent by herbaceous forbs and grasses. The data emphasize the need for mixed vegetative types in productive grouse habitat.

Leonhard, H. [WOOD- AND HAZEL-GROUSE IN SOUTHERN BADEN.] Albert-Ludwigs-U. Forstl. Abt. Schrreihe. 4: 295-303. 1965. [From Bibliog. Agr. 30(1), 1966. In German with English summ.] WR 121: 60

Moran, Richard J. PREDATION ON A GREATER PRAIRIE CHICKEN BY A GOSHAWK. Auk 83(1): 137. Jan. 1966. WR 121: 60

[Houghton Lake Wildl. Expt. Sta., Houghton Lake Heights, Mich.] A cock greater prairie chicken (Tympanuchus cupido) was struck down by a goshawk (Accipiter gentilis) while flying from the dancing ground.

Rodionov, M. A. [BIOLOGY OF THE CAPERCAILLIE (TETRAO UROGALLUS L.) IN THE LENINGRAD OBLAST.] Uch. Zap. Leningr. Gos. Pedagog. Inst. Im. A. I. Gertsena 230: 103-137. 1963. [From Biol. Abstr. 46(17), 1963, from Referat. Zhur., Biol., 1965, no. 11135. Transl. of Russian abstr.] WR 121: 60

Rodionov, M. A. [CONTRIBUTION TO THE BIOLOGY OF THE HAZEL GROUSE (TETRASTES BONASIA L.) IN THE LENINGRAD OBLAST.] Uch. Zap. Leningr. Gos. Pedagog. Inst. Im. A. I. Gertsena 230: 139-165. 1963. [From Biol. Abstr. 46(17), 1965, from Referat. Zhur., Biol., 1965, no. 11139. Transl. of Russian abstr.] WR 121: 60

Stirling, Ian, and J. F. Bendell. CENSUS OF BLUE GROUSE WITH RECORDED CALLS OF A FEMALE. J. Wildl. Mgmt. 30(1): 184-187. Jan. 1966. WR 121: 61

[Univ. Canterbury, Christchurch, New Zealand.] Abstract: Territorial male blue grouse (Dendragapus obscurus) were censused by their response to the playback of recorded precopulatory calls of a hen. The method is fast, accurate, and makes males easy to detect and observe. The response to the call appears to be the same throughout the day. Recorded calls should be useful alone, or with conventional search, in detecting, censusing, observing, and capturing male and female blue grouse.

Yurgenson, P. B. [ANNUAL FACTORS IN THE DYNAMICS OF TETRAONIDAE IN ESTONIA.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 204-206. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 14I138. In Russian.] WR 121: 61

TURKEY

Barber, Harold L. THE STATUS OF WILD TURKEYS IN KENTUCKY. Ky. Happy Hunting Ground 22(27): 19-22, illus. Mar. 1966. WR 121: 61

Turkeys had virtually disappeared from Ky. by 1925, but through restocking efforts an estimated 2000 are found in the state.

Donohoe, Robert W. WILD TURKEY RESTOCKING, 1956-1963. Game Res. Ohio 3: 62-64, 1 fig. July 1965. WR 121: 61

[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Abstract: Stocking of game farm turkeys in Ohio was discontinued in 1957 after 1392 birds released in 6 years showed little success. Wild trapped turkeys (Meleagris gallopavo) have been released since 1956 in large forest areas in southeastern and southcentral Ohio. Raccoon State Forest received the first birds (6 ♂♂, 12 ♀♀) in 1956 and 1957. In the last 3 years, 58 turkeys have been trapped from this forest and transplanted to other areas. A total of 209 wild turkeys have been released in Ohio in 8 years.

Thomas, Jack Ward, Calvin Van Hoozer, and Rodney G. Marburger. WINTERING CONCENTRATIONS AND SEASONAL SHIFTS IN RANGE IN THE RIO GRANDE TURKEY. J. Wildl. Mgmt. 30(1): 34-49, 5 figs. Jan. 1966. WR 121: 61

[Texas Parks & Wildl. Dept., Llano.] Abstract: Turkeys (Meleagris gallopavo) were studied in three winter concentration areas of 5,120 acres, 5,760 acres, and 12,582 acres in Sutton County, Texas, during 1960-63. Peak populations were as high as one bird to 8.5 acres, 8.2 acres, and 17.9 acres on the concentration areas in 1961. Over a 3-year period in late February and early March 310 turkeys from wintering concentration areas were banded with aluminum leg bands to which colored flashers were attached. Fifty-three records of banded birds were obtained after they had dispersed to summer range. Movements ranged from 3.5 miles to 26 miles and averaged 10.9 miles. Turkeys returned to the wintering areas where they had been marked. Normally, no intermingling was noted between wintering areas. In one instance, turkeys left the traditional roosting areas, supposedly in response to predation, but returned after predators were controlled. All land on the Edwards Plateau is privately owned, and landlords control access for hunting purposes. During the November 16-December 31 hunting season, when turkeys were concentrated on wintering areas, turkey hunting was controlled by only a few landowners. This system results in underharvesting, and it is suggested that a spring gobbler season be considered. In the spring the birds were found over an area of approximately 400,000 acres. Thus, during a spring hunting season more landowners would control access to them. In addition, in years of high population hens could be made legal game during the fall season without damage to the population. Hopefully, these changes would result in a higher kill and provide more equitable distribution of access to the turkey population by licensed hunters.

Williams, Lovett E., Jr. CAPTURING WILD TURKEYS WITH ALPHA-CHLORALOSE. J. Wildl. Mgmt. 30(1): 50-56, 1 fig. Jan. 1966. WR 121: 62

[Game & Fresh Water Fish Comm., Gainesville, Fla.] Abstract: During approximately 1 year of experimental field use in Florida, 260 wild turkeys (Meleagris gallopavo) were captured with alpha-chloralose, an oral anesthetic. Two grams of the powdered drug per cup of bait, used without regard for the amount consumed by each individual, proved to be the most effective dosage. Eight of the 87 turkeys captured with this dosage died. Heavier dosages resulted in greater mortality and lighter dosages often produced subeffective narcosis. A surgical technique is described which is capable of eliminating nearly all overdosage mortality by removal of excess bait from the crop soon after capture.

DOVES AND PIGEONS

Abbott, Herschel G. MOURNING DOVES FEED ON WHITE PINE SEED. J. Forestry 64(3): 199-200. Mar. 1966. WR 121: 62

[Univ. Mass., Amherst.] Abstract: Concentrations of mourning doves were observed in cone-bearing white pine stands in western Massachusetts during the fall of 1962 and evidence was collected indicating these birds fed heavily on the seeds of white pine. Mourning doves were seen to eat seed on the forest floor, to peck at fallen cones and extract seeds from cones still attached to the tree. Consumption of pine seed by mourning doves is viewed as constituting a new element in forest-animal relations in this region. Because good white pine seed crops have become increasingly less frequent, this additional predatory force could influence natural regeneration.

Drewien, Roderick C., Richard J. Vernimen, Stanley W. Harris, and Charles F. Yocom. SPRING WEIGHTS OF BAND-TAILED PIGEONS. J. Wildl. Mgmt. 30(1): 190-192, 1 fig. Jan. 1966. WR 121: 62

[S. Dak. State Univ., Brookings.] Abstract: In the spring of 1964 weights of 386 adult band-tailed pigeons (Columba fasciata) and 10 juveniles were obtained at the Humboldt State College campus, Arcata, California. The average weights of adults were 404 grams (males), 386 grams (females), and 395 grams (sexes combined). Maximum weights were 510 grams (males) and 472 grams (females). The average and maximum weights are about 2 ounces or 53-71 grams heavier than any weight shown in the literature. Fifty-three pigeons could not be sexed accurately by cloacal characters or plumage coloration and were believed to be late-hatched young of the year before. Adults could not be distinguished by sex on the basis of weight difference. Presence of cloacal characters was found to be the most accurate method of sexing adults.

Franks, Edwin Clark. THE EFFECTS OF MANIPULATED EGG TEMPERATURE ON INCUBATION BEHAVIOR IN THE RINGED TURTLE DOVE, STREPTOPELIA RISORIA. Ph.D. thesis, Ohio State Univ. 118 p. 1965. [From Dissertation Abstr. 26(7), 1966.] WR 121: 62

Goodwin, Derek. THE BOWING DISPLAY OF PIGEONS IN REFERENCE TO PHYLOGENY. Auk 83(1): 117-123. Jan. 1966. WR 121: 62

[British Museum, Cromwell Road, London, SW 7, England.] Based on observations of about 32 spp. of pigeons.

Macmillan, Andrew T. THE COLLARED DOVE IN SCOTLAND. Scottish Birds 3(6): 292-301. Summer 1965. WR 121: 62

"In the eight years since the species arrived in Scotland it has increased to over 1100 birds and has been recorded in every county except Selkirk, Peebles, Kinross and Bute."

Szuman, Jerzy. OBSERWACJE NAD GNIEŻDZENIEM SIE SYNOGARLICY TURECKIEJ. [OBSERVATIONS ON THE NESTING OF THE COLLARED TURTLE DOVE.] Przegl. Zool. 8 (1): 66-68. 1964. [From Biol. Abstr. 46(17), 1965. In Polish with English summ.] WR 121: 62

[Polish Zool. Soc., Breslau, Poland.]

Barros-Valenzuela, Rafael. APUNTES SOBRE EL PATO JERGÓN GRANDE. [NOTES ON THE LARGE DUCK ANAS SPINICAUDA (VIEILLOT).] An. Acad. Chilena Cienc. Nat. 48 (26): 75-82, illus. 1963. [From Biol. Abstr. 46(15), 1965. In Spanish.] WR 121: 63

[Acad. Chilena Cienc. Nat., Santiago, Chile.] "Distribution, morphology, biology."

Bartonek, James C. MORTALITY OF DIVING DUCKS ON LAKE WINNIPEGOSIS THROUGH COMMERCIAL FISHING. Canadian Field-Nat. 79(1): 15-20, 1 fig. Jan.-Mar. 1965. WR 121: 63

[Univ. Wis., Madison.] From 1961 to 1963, observations were made of 154 birds representing 8 spp. that were caught in gill-nets. Adult male redheads were more frequently netted than any other group of waterfowl. Except possibly for botulism outbreaks on lakes where molting occurred this relatively large loss to the adult male diving-duck population represents a unique situation. Generally the only summertime mortality reported for waterfowl is that of nesting females or juvenile birds.

Bednarik, Karl E. CANADA GOOSE MANAGEMENT IN OHIO. Game Res. Ohio 3: 180-206, 8 figs. July 1965. WR 121: 63

[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: This report summarizes the annual production and harvest of the Canada goose (Branta canadensis), management problems, and projected management measures on Ohio's three Canada goose management units, 1958-1963. Emphasis is on more recent years, especially 1963. In 1963, 1050 goslings were produced at Mercer County, 350 at Killdeer Plains, and 211 at Mosquito Creek; a total of 1611. Approximately 2035 Canada geese were harvested in the vicinity of these three management units.

Bednarik, Karl E. MISSISSIPPI FLYWAY WOOD DUCK BANDINGS, 1963. Game Res. Ohio 3: 206-214. July 1965. WR 121: 63

[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Recent wood duck bandings in Ohio and other Mississippi Flyway states are described and past banding efforts and techniques are discussed. In 1963, Ohio banded 2343 wood ducks; 23,220 were banded in the flyway.--From abstr.

Bednarik, Karl E., and Charles L. Hanson. OHIO'S WATERFOWL PIONEERING PROGRAM. Game Res. Ohio 3: 153-171, 6 figs. July 1965. WR 121: 63

[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: From 1959-1963, a total of 16,983 ducks were released in Ohio in an attempt to establish new nesting populations in unoccupied wild areas. Black ducks (Anas rubripes), wood ducks (Aix sponsa), and redheads (Aythya americana) were released, but most were mallards (Anas platyrhynchos): of 13,590 mallards released, 12,218 were hand reared ducklings. Returns of banded birds and the high degree of acquired tameness of release ducklings indicated the program was unsuccessful. Mortality of hand reared mallard ducklings was approximately 74 percent by the end of the first waterfowling season, and 100 percent after 2.5 years in the wild.

Bednarik, Karl E., and Donald W. Thompson. WATERFOWL PRODUCTION IN THE LAKE ERIE MARSHES AND ADJACENT HAYBELT REGION. Game Res. Ohio 3: 172-180. July 1965. WR 121: 63

[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: Water level manipulations in diked units of the Magee Marsh, Ottawa County, have improved waterfowl nesting conditions. The number of territorial pairs has risen steadily from about 54 in 1953 to 251 in 1964. In 1963, 130 observed duck broods comprised 814 ducklings; in 1964, 302 broods comprised 1605 ducklings. Duck and ring-necked pheasant (Phasianus colchicus) nest densities in the 14,419 acres of alfalfa hay adjacent to the Ohio Lake Erie marshes were estimated in 1963 to be 0.022 and 0.041 per acre, respectively. Only 3.3 percent of the estimated 317 duck nests and 14.5 percent of the 519 pheasant nests in the haybelt region produced young; mowing caused most of the nest destruction.

Benson, Dirck. HOW MANY WILD DUCKS FROM NEW YORK? [N.Y.] Conservationist 20(2): 20-22, illus. Oct.-Nov. 1965. WR 121: 64

[N. Y. Dept. Conserv., Albany.] "In recent years our duck harvest has been about 200,000 birds--20 to 30 per cent were blacks, 20 to 30 per cent woodduck, 15 to 20 per cent mallards and about one per cent blue-winged teal.... The records suggest that 40 to 50 thousand of our annual duck harvest--20 to 25 per cent--are New York products.... [It is calculated] that 80 to 100 thousand young ducks are brought to flight age annually in New York."

Boase, Henry. SHELDUCK BROODS IN THE TAY ESTUARY. British Birds 58(5): 175-179. May 1965. WR 121: 64

Summary: This paper on shelducks Tadorna tadorna in the Tay Estuary, Scotland, deals with the early establishment of a feeding territory; the attendance of adults on broods or packs; the feeding routine and rest period; the aggressive behaviour of caretaker adults and territory holders; and the late association of adults and fledged young. Consideration of the dates and counts of 84 broods indicates that the peak period for their arrival on the Tay mud-flats is 10th-12th June and that the average number of young in a brood there is seven. A pack is taken as consisting of at least twenty young and the earliest date recorded at Kingoodie was 16th June.

Buscher, Henry N. INTESTINAL HELMINTHS OF THE BLUE-WINGED TEAL, ANAS DISCORS L., AT DELTA, MANITOBA. Canadian J. Zool. 44(1): 113-116. Jan. 1966. WR 121: 64

[Box 36, School Med., San Juan, Puerto Rico.] Abstract: Twenty species of helminths were found in 114 blue-winged teal, Anas discors L., collected during the summers of 1963 and 1964 at Delta, Manitoba. The incidence of the helminths was recorded in extensity and intensity. Differences in helminth infections of adult and juvenile blue-winged teal were noted.

Chamberlain, E. B., and C. F. Kaczynski. PROBLEMS IN AERIAL SURVEYS OF WATERFOWL IN EASTERN CANADA. US F&WS, Spec. Sci. Rept.--Wildl. no. 93. iii + 21 p. 5 figs. Nov. 1965. WR 121: 64

[Migratory Bird Populations Sta., Laurel, Md.] Abstract: Experimental surveys of waterfowl breeding populations in eastern Canada have been conducted intermittently since 1949 to develop a procedure for making reliable estimates of breeding populations and production of black ducks and Canada geese in this region. This report reviews in detail the black duck breeding population surveys. The vastness of the breeding range precludes complete coverage; even the amount of sampling required for sound predictions is a major consideration. Several approaches to stratified sampling failed to produce a useful plan. Variations in phenology within the survey area appear to be a major factor in developing a reliable sampling plan; a method that takes these variations into account is presented. Analysis of data from 4 years gave trends in breeding population size that agreed generally with trends in corresponding winter population data; previous interpretation methods did not produce this agreement.

Cook, R. S., and D. O. Trainer. EXPERIMENTAL LEAD POISONING OF CANADA GEESE. J. Wildl. Mgmt. 30(1): 1-8, 3 figs. Jan. 1966. WR 121: 64

[Univ. Wis., Madison.] Abstract: Canada geese (Branta canadensis) were experimentally exposed to known amounts of lead. The course of the lead and of the disease in geese was followed, utilizing established laboratory procedures. Gross signs of lead poisoning first appeared 5-7 days following ingestion. The length of time until signs of disease or death occurred was related to the amount of lead ingested. Twenty-five or more pellets resulted in death within 10 days, while 10 or fewer pellets permitted survival as long as 72 days. Ingestion of large numbers of pellets resulted in a rapid increase of lead levels in the blood, acute poisoning, and early death. Ingestion of fewer pellets resulted in a slower increase of lead in the blood, chronic poisoning, and longer survival, with more "typical" lead poisoning signs and pathology. Lead pellets appeared to erode at a constant rate regardless of the number in the gizzard. The largest lead pellet volume (66 percent) was

eroded within the first 3 days after exposure, and it took approximately 45 days for the remaining volume to disappear. Normal lead levels of blood for Canada geese were found to be 0.018-0.037 mg/100 g blood. The lead levels of blood of lead-poisoned geese reached a peak between the third and tenth day, and ranged from 0.320-1.680 mg/100 g. Internal lesions as well as histopathological changes are described. High lead levels in blood and liver tissue, typical signs, and pathological lesions were necessary to diagnose lead poisoning in geese. The possible significance and effect of lead poisoning on the fecundity of geese are discussed.

Des Lauriers, James R., and Bayard H. Brattstrom. COOPERATIVE FEEDING BEHAVIOR IN RED-BREASTED MERGANSERS. Auk 82(4): 639, 1 fig. Oct. 1965. WR 121: 65
[Calif. State Coll., Fullerton.] Seven Mergus serrator were behaving in a manner suggesting they were fishing cooperatively.

de Vos, A. OBSERVATIONS ON THE BEHAVIOUR OF CAPTIVE TRUMPETER SWANS DURING THE BREEDING SEASON. Ardea 52: 166-189. 1964. [From Ibis 107(3), 1965.] WR 121: 65

Dorst, Jean. CONSIDERATIONS SUR L'HIVERNAGE DES CANARDS ET LIMICOLES PALEARCTIQUES EN AFRIQUE TROPICALE. [CONSIDERATIONS ON THE MIGRATION OF PALEARCTIC DUCKS AND SHORE BIRDS TO TROPICAL AFRICA.] Terre & Vie 1962(2): 183-192. Apr.-June 1962. In French. WR 121: 65
[Muséum National d'Histoire Naturelle, Paris, France.]

Dzubin, Alex. A STUDY OF MIGRATING ROSS GEESE IN WESTERN SASKATCHEWAN. Condor 67(6): 511-534, 1 fig. Nov.-Dec. 1965. WR 121: 65
[Univ. Saskatchewan, Saskatoon, Canada.] Since 1960, a large part of the Ross goose population has shifted its migration route from central Alberta to the Kindersley district of Saskatchewan. The change in migratory route was associated with a flooding of the feeding marshes of the Athabasca delta and drying of central Alberta habitat. Hunting of Ross geese was first legalized in 1963, but 500 to 2235 were illegally killed each year before they became legal game. The Calif. population was estimated to have increased from 6,000 in 1955 to 31,880 in 1965, and the continental population was estimated to be 44,000 in 1965.--From summ.

Fallis, A. M., and G. F. Bennett. ON THE EPIZOOTIOLOGY OF INFECTIONS CAUSED BY LEUCOCYTOZOON SIMONDI IN ALGONQUIN PARK, CANADA. Canadian J. Zool. 44(1): 101-112, 1 fig. Jan. 1966. WR 121: 65
[Ontario Res. Foundation, Toronto, Canada.] Abstract: Transmission of Leucocytozoon simondi in ducks is initiated by Simulium anatinum in May and this fly is the vector for 2-3 weeks. Simulium rugglesi is the vector in June and July and sporadically until September in some years. Epizootics are related to the feeding and habitat specificity of the flies, their longevity, their flight range, the length of the life cycle of the parasite, and its specificity for ducks. Flies were marked with ^{32}P to determine their flight range. Specificity was assessed by injecting birds with sporozoites from simuliids that fed on birds infected with different species of Leucocytozoon. All ducks exposed to the flies in May, June, and July, along a lakeshore, became infected and many died. Transmission of the parasite, although most pronounced on the lakeshore and along a river that harbored the larval stages of the simuliids, did occur over the water 100 yd from shore and in the woods. Transmission occurred only occasionally 15 ft above water or ground level.

Frith, H. J. ECOLOGY OF THE FRECKLED DUCK, STICTONETTA NAEVOSA (GOULD). CSIRO Wildl. Res. 10(1): 125-139, 1 fig., 2 pls. Nov. 1965. WR 121: 65
[Div. Wildl. Res., CSIRO, Canberra, Australia.] Summary: The freckled duck mainly lives in the inland where its principal breeding habitat is restricted to a few relatively permanent swamps. Its breeding season is basically regular but it retains the capacity to breed out of season when

extensive flooding occurs. It is to some extent nomadic but must be considered one of the more sedentary inland ducks. It is largely a filter-feeder. It is pointed out that the freckled duck is not secure and could decline further following small changes in land-use practices in the inland.

Garden, Elizabeth A., C. Rayski, and Valerie M. Thom. A PARASITIC DISEASE IN EIDER DUCKS. Bird Study 11(4): 280-287. Dec. 1964. WR 121: 66

Of 162 eiders (Somateria mollissima) found dead, 140 carried infestations of the acanthocephalan, Profilicollis botulus. Of 33 birds shot, 14 were infested with this worm. Immature birds were more heavily infested than adults and females than males. Most mortality of immatures was during Feb.-May and of adult females during June-July. The common shore crab (Carcinus moenas) was found to be an intermediate host for P. botulus.--From summ.

Gotzman, Jerzy. ENVIRONMENT PREFERENCE IN THE GREBES (PODICIPEDIDAE) DURING BREEDING SEASON. Ekologia Polska--Ser. A 13(16): 289-302, 6 figs. 1965. In English with Polish summ. WR 121: 66

Abstract: The paper presents results of studies on environment preference and diversity of ecological niches of the Grebes (Podicipedidae), during their breeding season. Particular consideration is given to the relationship between the type and structure of plant communities and the localization of nests of the different species of Podicipedidae, as well as to the localization of nests in relation to feeding territories.

Hardister, John P. LIFE HISTORY AND MANAGEMENT OF THE WOOD DUCK. PART 1. Wildl. in N. C. 30(1): 10-12, illus. Jan. 1966. WR 121: 66

Description, distribution, importance, species management and nesting of Aix sponsa.

Hein, Dale. FLOAT COUNTS VS FLIGHT COUNTS AS INDICES TO ABUNDANCE OF NESTING WOOD DUCKS. J. Wildl. Mgmt. 30(1): 13-16. Jan. 1966. WR 121: 66

[Wake Forest Coll., Box 7325, Reynolda Sta., Winston-Salem, N. C.] Abstract: Counts of wood ducks (Aix sponsa) made during canoe float trips on Mississippi River tributaries in northeast Iowa were less useful than counts made at mouths of those streams as flights passed from scattered roost sites in the bottoms to nesting, feeding, and loafing areas in tributary valleys. Coefficients of variation were 0.29 for float counts and only 0.08 for flight counts.

Hunt, Eldridge G., and William Anderson. RENESTING OF DUCKS AT MOUNTAIN MEADOWS, LASSEN COUNTY, CALIFORNIA. Calif. Fish & Game 52(1): 17-27, 5 figs. Jan. 1966. WR 121: 66

[Calif. Dept. Fish & Game, Sacramento.] Abstract: During the spring and summer of 1956, a study was completed on an area approximating 1,000 acres of marsh and meadowland at Mountain Meadows Reservoir, Lassen County, California, to obtain information on the renesting habits of ducks. In all, 110 ducks were captured on their nests, banded, colormarked, and released. Their eggs were removed to achieve the effect of nest destruction. Nineteen of the marked ducks (six cinnamon teal, eight ring-necked ducks, and five lesser scaup) were found renesting. Four of the renesting ducks (one cinnamon teal, one ring-necked duck, and two lesser scaup) were known to have renested twice. One scaup renested a third time.

Jahn, Laurence Roy. DUCK AND COOT ECOLOGY AND MANAGEMENT IN WISCONSIN. Ph.D. thesis, Univ. Wis. 856 p. 1965. [From Dissertation Abstr. 26(7), 1966.] WR 121: 66

Johnsgard, Paul A. BEHAVIOR OF THE AUSTRALIAN MUSK DUCK AND BLUE-BILLED DUCK. Auk 83(1): 98-110, 2 figs. Jan. 1966. WR 121: 66

[Univ. Nebr., Lincoln.] An analysis of phylogenetic relationship as indicated by sexual displays.

Kear, Janet. RECENT CHANGES IN SCOTTISH BARLEY ACREAGES AND THE POSSIBLE EFFECT ON WILD GEESE. Scottish Birds 3(6): 288-292, 1 fig. Summer 1965. WR 121: 67

Latta, William C., and Reginald F. Sharkey. FEEDING BEHAVIOR OF THE AMERICAN MERGANSER IN CAPTIVITY. J. Wildl. Mgmt. 30(1): 17-23, 1 fig. Jan. 1966. WR 121: 67

[Mich. Dept. Conserv., Vanderbilt.] Abstract: In 1962, two American mergansers (Mergus merganser americanus) and in 1963, six were held in captivity for 49-69 days to study feeding behavior. In both years and for all birds, the amount of fish consumed per bird per day equaled 17.9-26.8 percent of the mean weight of the birds. However, all except three of these captive mergansers continually lost weight. Three birds maintained their body weight for 49-51 days on a daily ration of 6.02 to 6.62 ounces of fish--18.3 to 19.6 percent of mean bird weight. Three different series of tests were made on size of trout selected in feeding the mergansers. When presented with live trout 4-8 inches long, the mergansers showed a preference for the smaller trout over the larger ones. Two series of tests were made to determine the upper limit in size of trout that mergansers can eat. Girth rather than length of trout seemed critical. The largest merganser (60 ounces) was able to consume a trout with a girth of 6.2 inches, while the smallest merganser (33 ounces) could swallow trout with girth of up to only 4.9 inches. In 1963, equal numbers of mottled sculpins (Cottus bairdi), creek chubs (Semotilus atromaculatus), and brook trout (Salvelinus fontinalis) of approximately the same size were presented to four mergansers to determine if there was selection of a particular species for consumption. The mergansers consumed about equal numbers of creek chubs and brook trout but a few less of mottled sculpins.

McFarland, Larry Z., and Harry George. PREFERENCE OF SELECTED GRAINS BY GEESE. J. Wildl. Mgmt. 30(1): 9-13, 2 figs. Jan. 1966. WR 121: 67

[Univ. Calif., Davis.] Abstract: The preference of 12 livetrapped adult geese for several grains was tested over a 49-day period. During this time the average daily consumption per goose was approximately 182 grams. Rice (Oryza sativa) was preferred 2:1 over barnyard grass or watergrass (Echinochloa crusgalli) but watergrass was preferred 5-6:1 over milo (Sorgum vulgare), alkali bulrush (Scirpus robustus) and safflower (Carthamus tinctorius), 9:1 over barley (Hordeum vulgare) and 12:1 over lana vetch (Vicia dasycarpa). Examination of the stomach contents of wild geese in the Sacramento Valley by personnel of the California Department of Fish and Game also indicated that the volume of rice consumed was from 1.5-7 times greater than that of watergrass. Marked increases in grain consumption were associated with sudden declines in minimum air temperature, increased air movement, or a sudden lessening of daily air temperature fluctuations. Blood chemistry tests verified that these geese maintained a healthy nutritional state.

McGilvrey, Frank B. FALL FOOD HABITS OF WOOD DUCKS FROM LAKE MARION, SOUTH CAROLINA. J. Wildl. Mgmt. 30(1): 193-195. Jan. 1966. WR 121: 67

[Patuxent Wildl. Res. Center, Laurel, Md.] Abstract: A total of 108 stomachs of wood ducks (Aix sponsa) collected from hunters on the upper end of Lake Marion, South Carolina, between November 29 and December 6, 1961, were examined for information on food habits. Six plants made up over 98 percent of the total volume. Five were tree fruits: water and willow oak (Quercus nigra and Q. phellos), baldcypress (Taxodium distichum), sweetgum (Liquidambar styraciflua), and water hickory (Carya aquatica). The sixth important food was corn (Zea mays). In areas being managed for wood ducks and timber, therefore, these tree species should not be removed.

Nagel, John. FIELD FEEDING OF WHISTLING SWANS IN NORTHERN UTAH. Condor 67 (5): 446-447. Sept.-Oct. 1965. WR 121: 67

[Utah Dept. Fish & Game, Salt Lake City.] Observations of 500-600 whistling swans (Olor columbianus) feeding on waste corn in a single machine-harvested field were common once the pattern was established.

Paludan, Knud. GRAGASENS TRAEK OG FAELDNINGSTRAEK. [MIGRATION AND MOULT-MIGRATION OF ANSER ANSER.] Danske Vildtundersøgelser no. 12. 54 p., 12 figs. 1965. In Danish with English summ. WR 121: 68

Information on 1015 grey lag geese banded at five Danish stations during 1957-62.

Peterson, Roger T. IN MEMORIAM: LUDLOW GRISCOM. Auk 82(4): 598-605, 1 pl. Oct. 1965. WR 121: 68

[Old Lyme, Conn.]

Robyns De Schneidauer, Thierry. NOTE SUR LE COMPORTEMENT ET LA MORPHOLOGIE DE ANSER ANSER L.; OBSERVATIONS EFFECTUÉES DANS LA RÉSERVE DU ZWIN AU COURS DE L'EXERCICE 1961-1962. [NOTE ON BEHAVIOR AND MORPHOLOGY OF ANSER ANSER L.; OBSERVATIONS MADE IN THE ZWIN RESERVE IN 1961-1962.] Gerfaut Rev. Belg. Ornithol. 52(4): 610-625, illus. 1962. [From Biol. Abstr. 46(18), 1965. In French.] WR 121: 68

Roux, Francis. QUELQUES DONNEES SUR LES ANATIDES ET CHARADRIIDES PALEARCTIQUES HIVERNANT DANS LA BASSE VALLEE DU SENEGAL ET SUR LEUR ECOLOGIE. [SOME DATA ON THE PALEARCTIC ANATIDAE AND CHARADRIIDAE WINTERING IN THE LOWER VALLEY OF SENEGAL AND THEIR ECOLOGY.] Terre & Vie 1959(4): 315-321. Oct.-Dec. 1959. In French. WR 121: 68

Schranck, Barnet. A DEVICE FOR DETERMINING DUCK BROOD HATCHING DATES. J. Wildl. Mgmt. 30(1): 195-197, 1 fig. Jan. 1966. WR 121: 68

[Mo. Coop. Wildl. Res. Unit, Columbia.] Abstract: A circular calculator is described for determining duck brood hatching dates. The inexpensive device, which was found to be accurate and time saving, is easy to operate and construct.

Smart, Glen. BODY WEIGHTS OF NEWLY HATCHED ANATIDAE. Auk 82(4): 645-648. Oct. 1965. WR 121: 68

[Migratory Bird Populations Sta., Laurel, Md.] Includes a table with data on about 40 forms.

Spitz, Francois. REPARTITION ECOLOGIQUE DES ANATIDES ET LIMICOLES DE LA ZONE MARITIME DU SUD DE LA VENDEE. [ECOLOGICAL DISTRIBUTION OF ANATIDAE AND LIMICOLAE OF THE MARITIME ZONE OF SOUTHERN VENDÉE.] Terre & Vie 1964(4): 452-488. [23] figs. Oct.-Dec. 1964. In French with English summ. WR 121: 68

[Inst. Natl. Recherche Agronomique, Jouy-en-Josas (S.-et-O.), France.] A four-year study was made of the Limicolae and Anatidae present throughout the year in the Anse de l'Aiguillon (Vendée) and neighborhood, with special reference to feeding grounds and times of feeding (in relation to tides) of each species, movements of individuals and association between species. A census was made each month of most species, enabling biomass to be estimated.--From summ.

Wright, J. Kenneth. OBSERVATIONS OF BEHAVIOR OF THE ANDEAN TORRENT DUCK. Condor 67(6): 535. Nov.-Dec. 1965. WR 121: 68

[Museum Vertebrate Zool., Berkeley, Calif.] Escape and courtship behavior of Merganetta armata.

Yocom, Charles F. ESTIMATED POPULATIONS OF GREAT BASIN CANADA GEESE OVER THEIR BREEDING RANGE IN WESTERN CANADA AND WESTERN UNITED STATES. Murrelet 46 (2): 18-26, 1 fig. May-Aug. 1965. WR 121: 68

[Humboldt State Coll., Arcata, Calif.] In the fall of 1951, there may have been over 120,000 Great Basin Canada geese including 61,450 young of the year, 34,300 breeding adults and 34,000 one and two year old geese.--From summ.

Evans, P. R. THE VALUE OF MEASUREMENTS IN THE STUDY OF WADER MIGRATION; A REPLY. Bird Study 11(4): 262-264. Dec. 1964. WR 121: 69
[Monks' House, Seahouses, Northumberland, England.] Reply to criticisms by White and Gittins [WR 121: 70] of an earlier paper by Evans [WR 114: 49].

Ferrigno, Fred, Sr. THEY GO UP AND DOWN / POPULATION DYNAMICS OF THE CLAPPER RAIL. N. J. Outdoors 16(8): 3-9, illus. Feb. 1966. WR 121: 69
Summary: According to the 10-year data collected from two study areas in Cape May County, it appears that clapper rail populations are not only affected by tides, but by territorialism as well. Phenologically speaking, a series of good nesting years will lead to a certain degree of crowding, which will reduce production for that year, and start the following year. There are also indications that other decreasing factors are superimposed on the recent territorial drop in 1963, which lowered the population in 1964 and possibly lowered it even more in 1965. This decline came during a time when drought conditions were prominent. The lack of rainfall seriously reduced the tall salt marsh cordgrass and this may lead to heavier nest losses and poorer survival of young and adult rails to natural and other causes. Since populations have dropped to very low levels, restrictions on the number of birds taken by hunters, should be imposed by the federal government.

Fordham, R. A. BREEDING BIOLOGY OF THE SOUTHERN BLACK-BACKED GULL. 1. PRE-EGG AND EGG STAGE. Notornis 11: 3-34. 1964. [From Ibis 107(3), 1965.] WR 121: 69

Fordham, R. A. BREEDING BIOLOGY OF THE SOUTHERN BLACK-BACKED GULL. 2. INCUBATION AND THE CHICK STAGE. Notornis 11: 110-126. 1964. [From Ibis 107 (3), 1965.] WR 121: 69

Holmes, Richard T. FEEDING ECOLOGY OF THE RED-BACKED SANDPIPER (CALIDRIS ALPINA) IN ARCTIC ALASKA. Ecology 47(1): 32-45, 7 figs. Winter 1966. WR 121: 69
[Univ. Calif., Berkeley.] Red-backed sandpipers near Barrow, Alaska, feed largely on larvae and adults of Tipulidae and Chironomidae.

Meanley, Brooke. EARLY-FALL FOOD AND HABITAT OF THE SORA IN THE PATUXENT RIVER MARSH, MARYLAND. Chesapeake Sci. 6(4): 235-237, 1 fig. Dec. 1965. WR 121: 69
[Patuxent Wildl. Res. Center, Laurel, Md.] Polygonum arifolium, Echinochloa walteri, Polygonum punctatum and Polygonum sagittatum were the high ranking food items by volume and occurrence.

Meyerriecks, Andrew J. RING-BILLED GULLS GORGE ON FIDDLER CRABS. Wilson Bull. 77(4): 402-403. Dec. 1965. WR 121: 69
[Univ. South Fla., Tampa.] One ring-billed gull (Larus delawarensis) swallowed 15 fiddler crabs (Uca pugilator) in rapid succession.

Peakall, David B. THE STATUS OF THE RUFF IN NORTH AMERICA. Wilson Bull. 77(3): 294-296. Sept. 1965. WR 121: 69
[Upstate Med. Center, 766 Irving Ave., Syracuse, N. Y.] More than 90 records of the ruff (Philamachus pugnax) for eastern North America are listed.

Sealy, Spencer G. REDHEAD PARASITISING THE NEST OF THE AMERICAN BITTERN. Blue Jay 23(4): 172, 1 fig. Dec. 1965. WR 121: 69
[Battleford, Saskatchewan, Canada.]

Strauch, Joseph G., Jr., and William Thackaberry. A WESTERN GULL WITH SYMMETRICAL WHITE WING PATCHES. Condor 67(5): 443, 1 fig. Sept.-Oct. 1965. WR 121: 69
[Corvallis, Oreg.]

Teal, John M. NESTING SUCCESS OF EGRETS AND HERONS IN GEORGIA. Wilson Bull. 77(3): 257-263. Sept. 1965. WR 121: 70

[Woods Hole Oceanographic Inst., Woods Hole, Mass.] Summary: A study of the nesting success of common egrets, snowy egrets, Louisiana herons, black-crowned night herons, and white ibis was made on a marshy pond on Sapelo Island, Georgia. The nests were visited once a week, and eggs and young counted and weighed. Losses were mainly in the egg stage in the common egret and ibis and in the nestling stage in the snowy egret and Louisiana heron. Losses of the night heron were small in both stages. Losses from starvation were more common in four-egg than three-egg clutches. A calculation of energy requirements indicates that although food is limited, as witnessed by starvation of nestlings, the birds use only a portion of the marsh production of suitable prey.

Van Der Vloet, H. BROEDPOGINGEN VAN DE ZWARTKOPMEEUW, LARUS MELANOCEPHALUS TEMMINCK, NABIJ DE BELGISCH-NEDERLANDSE GRENS. [NESTINGS OF THE BLACK-HEADED GULL, LARUS MELANOCEPHALUS TEMMINCK AT THE BELGIAN-NETHERLAND BORDER.] Gerfaut Rev. Belg. Ornithol. 52(4): 570-575, illus. 1962. [From Biol. Abstr. 46(18), 1965. In Dutch with French summ.] WR 121: 70

Walkinshaw, Lawrence H. A NEW SANDHILL CRANE FROM CENTRAL CANADA. Canadian Field-Nat. 79(3): 181-184. July-Aug. 1965. WR 121: 70

[1703 Wolverine Tower, Battle Creek, Mich.] "Grus canadensis rowani."

Wallace, Robert A. NESTING AND DEFENSIVE BEHAVIOR OF THE BLACK-NAPED TERN IN THE MALDIVE ISLANDS. Auk 83(1): 138. Jan. 1966. WR 121: 70

[Vanderbilt Univ., Nashville, Tenn.]

White, E., and J. C. Gittins. THE VALUE OF MEASUREMENTS IN THE STUDY OF WADER MIGRATION, WITH PARTICULAR REFERENCE TO THE OYSTERCATCHER. Bird Study 11(4): 257-261, 1 fig. Dec. 1964. WR 121: 70

[Univ. Coll. Ife, Ibadan, Nigeria.] Summary: Issue is taken with the conclusions drawn by P. R. Evans in his recent paper 'Wader measurements and wader migration' [WR 114: 49]. Factors affecting bill length and shape in the oystercatcher are used to illustrate the difficulties of accepting Evans' conclusions. It is demonstrated that the bill length of any individual is not constant.

White, Marshall, and Stanley W. Harris. WINTER OCCURRENCE, FOODS, AND HABITAT USE OF SNIPE IN NORTHWEST CALIFORNIA. J. Wildl. Mgmt. 30(1): 23-34, 3 figs. Jan. 1966. WR 121: 70

[Shasta, Calif.] Abstract: Occurrence, food habits, and habitat use of the wintering Wilson snipe (Capella gallinago) population in the Humboldt Bay region of northwest California were investigated from September, 1961, until April, 1963. The two study areas included salt marsh, and upland and lowland dairy pastures, the main habitat types used by snipe in this large wintering area. Snipe arrived during the first week of October and numbers increased to a yearly maximum in mid-November, representing fall migration. Shortly thereafter numbers declined considerably and then increased to one or more secondary peaks in December or later. During the winter, snipe occurrence on the study areas was variable. No well-defined increase in the population occurred during the period of spring migration. After March, numbers declined until the last snipe were seen in mid-April. Terrestrial insects (mostly beetles), seeds, crustaceans, and land snails were the most important food items. Food habits evaluation was complicated because the animal material was finely ground, and there was a large amount of unrecognizable plant fibers which the snipe may have picked up incidently while probing for food animals. Most feeding occurred in upland areas where foods were abundant. Aquatic and semi-aquatic foods were much less important than was indicated in previous studies. Lowland pastures and salt marsh islands were little used as feeding areas, although potential food was abundant. Salt marsh islands were much used for loafing and preening. Both pastures and salt marshes provided closely cropped vegetation, a condition favorable to use by snipe.

Abs, M., E. Curio, P. Kramer, and J. Niethammer. ZUR ERNÄHRUNGSWEISE DER EULEN AUF GALAPAGOS. [ON THE FEEDING HABITS OF THE OWLS OF GALAPAGOS.] J. Ornithol. 106: 49-57. 1965. [From Ibis 107(3), 1965. In German.] WR 121: 71
Abstract: Asio flammeus galapagoensis feeds mainly on birds, either Darwin's finches (Geospizidae) or storm petrels (Oceanodroma spp.). Tyto alba punctatissima takes mainly house mice and rats.

Adolphson, D. G., and G. M. Jonkel. 16 YEARS OF SNOWY OWL RECORDS FROM S. DAK. S. Dak. Bird Notes 17(3): 63-66, 2 figs. Sept. 1965. WR 121: 71

Barros-Valenzuela, Rafael. EL PEQUÉN Y LA LECHUZA. [THE SPECTYTO CUNICULARIA CUNICULARIA (MOLINA) AND THE OWL TYTO ALBA TUIDARA (J. E. GRAY).] An. Acad. Chilena Cienc. Nat. 48(26): 87-96. 1963. [From Biol. Abstr. 46(15), 1965. In Spanish.] WR 121: 71
[Acad. Chilena Cienc. Nat., Santiago, Chile.]

Bolander, Gordon L., and John R. Arnold. AN ABUNDANCE OF WHITE-TAILED KITES IN SONOMA COUNTY, CALIFORNIA. Condor 67(5): 446. Sept.-Oct. 1965. WR 121: 71
[Santa Rosa, Calif.] An increase in numbers of white-tailed kites (Elanus leucurus) is reported.

Enderson, James H. A BREEDING AND MIGRATION SURVEY OF THE PEREGRINE FALCON. Wilson Bull. 77(4): 327-339, 2 figs. Dec. 1965. WR 121: 71
[Colo. Coll., Colorado Springs.] Visits were made in 1964 to 47 western U. S. sites known to have been used by peregrine falcons (Falco peregrinus) as recently as 1959, and only 13 of the sites were found occupied by these falcons. The author drove 1,052 miles on the Texas Gulf Coast during 10-17 Oct. 1964 and tallied 44 different peregrine falcons.

Ferianc, Oskar. ROZŠÍRENIE DROPA VEĽKÉHO (OTIS TARDA L.) NA SLOVENSKU. [OTIS TARDA L. IN SLOVAKIA.] Biologia (Bratislava) 18(12): 900-915, map. 1963. [From Biol. Abstr. 46(17), 1965. In Czech with German and Russian summ.] WR 121: 71
[Zool. Ustav PFUK, Bratislava, Czechoslovakia.]

Foster, Mercedes. AN EARLY REFERENCE TO THE TECHNIQUE OF OWL CALLING. Auk 82(4): 651-653. Oct. 1965. WR 121: 71
[Univ. Calif., Berkeley.] Imitated calls of owls were used to attract owls at least as early as the first few years of the nineteenth century.

Ingram, Terrence N. WINTERING BALD EAGLES AT GUTTENBERG, IOWA--CASSVILLE, WISCONSIN, 1964-65. Iowa Bird Life 35(3): 66-78. Sept. 1965. WR 121: 71
[Apple River, Ill.]

Jonkel, G. M. SOUTH DAKOTA WINTERING EAGLE INVENTORIES. S. Dak. Bird Notes 17(3): 61-62. Sept. 1965. WR 121: 71
Summaries of bald and golden eagles inventoried during 1961-1965.

Mathisen, John. BALD EAGLE STATUS REPORT, 1965 / CHIPPEWA NATIONAL FOREST. Loon 37(3): 104-105. Sept. 1965. WR 121: 71
Thirty-nine (67%) of the 76 known nests on the area were active in 1965 and 22 (56%) of the active nests were considered successful. Comparisons are made with data for 1963 and 1964.

Naumov, S. [PREDATORY BIRDS AND COMMERCIAL HUNTING. SOME RESULTS OF A DISCUSSION.] Okhota & Okhotnich'e Khoz. 10: 19-24. 1963. [From Biol. Abstr. 46(18), 1965, from Referat. Zhur., Biol., 1964, no. 11I364. Transl. of Russian abstr.] WR 121: 71

Nel, J. A. J., and H. Nolte. NOTES ON THE PREY OF OWLS IN THE KALAHARI GEMSBOK NATIONAL PARK, WITH SPECIAL REFERENCE TO THE SMALL MAMMALS. Koedoe 8: 75-81, 1 fig. 1965. WR 121: 71
[Univ. Pretoria, Union of S. Africa.]

Postupalsky, Sergej, and Joseph P. Kleiman. OSPREY PREYS ON TURTLE. Wilson Bull. 77(4): 401-402. Dec. 1965. WR 121: 72
[2926 W. Thirteen Mile Rd., Royal Oak, Mich.] An osprey (Pandion haliaëtus) was seen with a turtle (presumably Chrysemys picta) in its talons.

Troyer, Willard A., and Richard J. Hensel. NESTING AND PRODUCTIVITY OF BALD EAGLES ON THE KODIAK NATIONAL WILDLIFE REFUGE, ALASKA. Auk 82(4): 636-638, 1 fig. Oct. 1965. WR 121: 72
[US F&WS, Kodiak, Alaska.] Eighty-eight eaglets were reared in 80 nests. In aerial surveys, 372 eagles were observed, and 238 (63%) of these were adults.

Vernon, C. J. THE 1964 BLACK EAGLE SURVEY IN THE MATOPOS, RHODESIA. Arnoldia 2(6): 1-9, 4 figs. 13 Oct. 1965. WR 121: 72

BLACKBIRDS , STARLINGS, CROWS

Brenner, Fred J. METABOLISM AND SURVIVAL TIME OF GROUPED STARLINGS AT VARIOUS TEMPERATURES. Wilson Bull. 77(4): 388-395. Dec. 1965. WR 121: 72
[Thiel Coll., Greenville, Pa.] The data indicate that the starling (Sturnus vulgaris) does not possess a physiological adaptation for cold. The species may thus have evolved the flocking habit which serves to reduce heat loss.

Brenner, Fred J., and William F. Malin. METABOLISM AND SURVIVAL TIME OF THE RED-WINGED BLACKBIRD. Wilson Bull. 77(3): 282-289. Sept. 1965. WR 121: 72
[Thiel Coll., Greenville, Pa.] The mean metabolic rate for a resting red-winged blackbird (Agelaius phoeniceus) was 6.31 ± 1.83 cc O_2/g-hr and the mean rate for an active bird was 12.46 ± 2.08 cc O_2/g-hr. The respiratory quotient for roosting birds after fasting 6 hours was 0.722, which indicates fat metabolism.--From summ.

Busse, Przemysław. NEST BUILDING DYNAMICS OF A BREEDING COLONY OF ROOK (CORVUS FRUGILEGUS L.). Ekologia Polska--Ser. A 13(25): 491-514, 12 figs. 1965. In English with Polish summ. WR 121: 72
[Wrocław Univ., Wrocław, Poland.] Abstract: This paper reports six years of observations on nest building in a town breeding colony of rooks. General lines in the development of the colony of rook during the breeding season have been considered and particular stages of the nest building process have been analysed. Main point is the influence of weather conditions upon nest-building.

Chamberlain, Dwight R. COMMON CROWS CATCHING EUROPEAN CHAFERS ON THE WING. Wilson Bull. 77(3): 296. Sept. 1965. WR 121: 72
[Va. Polytech. Inst., Blacksburg.] Flying European chafers (Amphimallon majalis) were pursued and captured by crows (Corvus brachyrhynchos).

Kuroda, Nagahisa. ADAPTIVE PARENTAL FEEDING AS A FACTOR INFLUENCING THE REPRODUCTIVE RATE IN THE GREY STARLING. Res. Population Ecol. 5(1): 1-10. June 1963. In English with Japanese summ. WR 121: 72
[Yamashina's Inst. Ornithol. & Zool., Shibuya, Tokyo, Japan.]

Kuroda, Nagahisa. COMPARATIVE ANALYSIS OF BREEDING RATES OF RURAL AND URBAN GREY STARLING COLONIES IN TOKYO AREA: THE SECOND REPORT (Part 2). Res. Population Ecol. 6(1): 1-12, 1 fig. June 1964. In English with Japanese summ. WR 121: 72
[Yamashina's Inst. Ornithol. & Zool., Shibuya, Tokyo, Japan.]

Meanley, Brooke. THE ROOSTING BEHAVIOR OF THE RED-WINGED BLACKBIRD IN THE SOUTHERN UNITED STATES. Wilson Bull. 77(3): 217-228, 2 figs. Sept. 1965. WR 121: 73

[Patuxent Wildl. Res. Center, Laurel, Md.] Summary: This report concerns the roosting behavior of the red-winged blackbird and associated species; and is based on observations made over a 14-year period mainly in the Southern United States. The greatest concentrations of red-winged blackbirds in the southern states occur in the Coastal Plain Province in or near major grain growing regions. Roosts are formed during every month of the year. The largest roosts are usually found in winter; the smallest during the breeding season. Composition of roosts may vary from place to place and season to season. The general locality in which roosts are found is probably influenced by food supply. The precise location is determined by the character of the habitat. Wetland situations are preferred by red-winged blackbirds. Most of the roosts in the Coastal Plain Province are located in marshes and swamps. Rice fields are important in the southern rice-producing area. Coniferous stands and bamboo are frequently used in the Piedmont Province. Blackbirds move out of roosts each morning at about dawn or shortly after, and return in the evening usually before sunset. Some birds may travel 35 miles or more from the starting point in the course of a day's feeding activity. On cloudy days blackbirds move into the roost earlier than on sunny days. At a Maryland roost subadult male red-winged blackbirds were the first to arrive at the roost. Females and then juveniles followed. Adult males were sporadic in their time of arrival. Stratification in a roost flight was observed where birds were flying downstream to a river marsh roost. Bobolinks flew at the greatest elevations; next in order of height were starlings, common grackles, brown-headed cowbirds, and red-winged blackbirds. The exodus of a large roosting population is usually of shorter duration than the movement into the roost. In virtually all roosts some segments of the population are segregated. Stratification by species and by sexes of some species has been noted in roosts. Blackbirds may roost on partly submerged vegetation in a marsh, on the ground in grassy fields, in branches of trees, or in various other sites. In deciduous thickets with high bird densities they may roost at elevations of 1 foot to 30 feet or more. In one Arkansas roost red-winged blackbirds were roosting along branches at an average of about three birds per foot.

Payne, Robert Berkeley. THE BREEDING SEASONS AND REPRODUCTIVE PHYSIOLOGY OF TRICOLORED BLACKBIRDS AND REDWINGED BLACKBIRDS. Ph.D. thesis, Univ. Calif. (Berkeley). 284 p. 1965. [From Dissertation Abstr. 26(7), 1966.] WR 121: 73

The difference in breeding patterns in these two closely related species appears to be related to species differences in the physiological control of sexual activity. Gonadal development and nesting in tricolored blackbirds are apparently controlled in part directly by rainfall and by an abundance of food as well as by daylength. Whereas rainfall and food are temporary features of the environment and so have little predictive value of future environmental conditions to redwinged blackbirds, the abbreviated nesting schedule from gonadal development and courtship to the hatching of a brood provides a shorter time lag in tricolored blackbirds.

Willson, Mary F. BREEDING ECOLOGY OF THE YELLOW-HEADED BLACKBIRD. Ecol. Monographs 36(1): 51-77, 14 figs. Winter 1966. WR 121: 73

[Univ. Ill., Urbana.] The following are discussed: establishment of territories, territory size, relationship of territory to breeding success, arrival of females, clutch size, incubation, hatching, brooding, nesting success, mortality, nestling growth, sex ratio of nestlings, exploitation of food resources, food brought to nestlings, changes in food of nestlings with weather, diurnal changes in food of nestlings, foraging areas of adults, rate of delivery of food to nestlings, delivery rate of food and fledging success, and care of nestlings by males.

OTHER BIRDS

Davies, P. W., and D. W. Snow. TERRITORY AND FOOD OF THE SONG THRUSH. British Birds 58(5): 161-175, 3 figs. May 1965. WR 121: 74

Davis, John. NATURAL HISTORY, VARIATION, AND DISTRIBUTION OF THE STRICKLAND'S WOODPECKER. Auk 82(4): 537-590, 12 figs. Oct. 1965. WR 121: 74
[Univ. Calif., Carmel Valley.] Chiefly a taxonomic discussion with some comments on ecology of Dendrocopos stricklandi.

Fitter, R. S. R. THE BREEDING STATUS OF THE BLACK REDSTART IN GREAT BRITAIN. British Birds 58(12): 481-492, 1 fig. Dec. 1965. WR 121: 74
This paper summarizes the records of black redstarts Phoenicurus ochruros breeding and holding territories in Great Britain during the 14 years from 1950 to 1963. The number of pairs proved to have bred (almost all in eastern and southeastern England) reached a peak of over 30 in 1950-52, but since then, except in 1953 and 1958, has never risen above 20 and has been as low as eleven. At least part of the general decline is due to the steady disappearance of suitable nesting sites in these areas.--From summ.

Hussell, D. J. T., and J. K. Woodford. PIPING PLOVER'S NEST CONTAINING EIGHT EGGS. Wilson Bull. 77(3): 294. Sept. 1965. WR 121: 74
[1916 Cambridge Rd., Ann Arbor, Mich.] A piping plover (Charadrius melodus) was found incubating a clutch of eight eggs. The nesting appeared to have been unsuccessful.

Lack, David. A LONG-TERM STUDY OF THE GREAT TIT (PARUS MAJOR). Jubilee Symposium Suppl., J. Ecol. 52 & J. Animal Ecol. 33: 159-173, 8 figs. Mar. 1964. WR 121: 74
[Edward Grey Inst. Field Ornithol., Oxford, England.] Summary: The breeding population of the great tit in Marley Wood between 1947 and 1962 fluctuated between seven and eighty-six pairs. The fluctuations were mainly synchronous with those of the blue tit, and also with those of the great tit in other woods in England and Holland. The commonest clutch was nine, and in most years the brood-size which on average resulted in most surviving juveniles was 9-10, though it varied in different years between five and fourteen. Clutch-size and the production-rate of nestlings were slightly lower at higher breeding densities. They had no apparent influence on the fluctuations in the breeding population. The critical factor determining the population fluctuations was the mortality of the juveniles between leaving the nest and the beginning of winter, probably mainly in June. This mortality was correlated with the ensuing beechmast crop, presumably because both were affected by certain conditions in summer. Predation and disease seem to have been unimportant, and the evidence suggests that the breeding density was not limited by territorial behaviour. Hence the chief density-dependent factor was probably food shortage, but this could not be studied in the great tit in Marley; the coal tit was probably limited by its winter food in conifer plantations.

Munyer, Edward A. INLAND WANDERINGS OF THE ANCIENT MURRELET. Wilson Bull. 77(3): 235-242, 1 fig. Sept. 1965. WR 121: 74
[Ill. State Museum, Springfield.] Most inland records of ancient murrelets (Synthliboramphus antiquus) were made in late Oct. or Nov. and were associated with weather disturbances along the Pacific coast. The birds are apparently able to survive for considerable periods on freshwaters.

Nelson, J. B. SOME ASPECTS OF THE BREEDING BIOLOGY AND BEHAVIOUR OF THE NORTH ATLANTIC GANNET ON THE BASS ROCK. Scottish Birds 3: 99-137. 1964. [From Ibis 107(3), 1965.] WR 121: 74

Pokrovskaya, I. V. [CONTRIBUTION TO THE ECOLOGY OF THE SISKIN (CARDUELIS SPINUS L.) IN THE LENINGRAD OBLAST.] Uch. Zap. Leningr. Gos. Pedagog. Inst. Im. A. I. Gertsena 230: 93-102. 1963. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1965, no. 11170. Transl. of Russian abstr.] WR 121: 74

OTHER BIRDS--Continued

Prokof'eva, I. V. [FEEDING OF THE LESSER SPOTTED WOODPECKER (DENDROCOPUS MINOR L.).] Uch. Zap. Leningr. Gos. Pedagog. Inst. Im. A. I. Gertsena 230: 87-91. 1963. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1965, no. 1I165. Transl. of Russian abstr.] WR 121: 75

Prokof'eva, I. V. [FOOD OF THE CHAFFINCH (FRINGILLA COELEBS L.) IN THE LENINGRAD OBLAST.] Uch. Zap. Leningr. Gos. Pedagog. Inst. Im. A. I. Gertsena 230: 71-86. 1963. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1965, no. 1I171. Transl. of Russian abstr.] WR 121: 75

Reid, Brian. THE ADELIE PENGUIN (PYGOSCELIS ADELIAE) EGG. New Zealand J. Sci. 8(4): 503-514, 1 fig. Dec. 1965. WR 121: 75
[Wildl. Branch, Wellington, New Zealand.]

Rolle, Francis J. AN OBSERVATION OF HEAVY PREDATION BY PEARLY-EYED THRASHER. Wilson Bull. 77(3): 296-297, 1 fig. Sept. 1965. WR 121: 75
[Univ. Puerto Rico, Rio Piedras.] A pearly-eyed thrasher (Margarops fuscatus) killed and cached 13 rats (Rattus sp.)

Ruwet, J.-C. LA CONSERVATION DU VANNEAU, VANELLUS VANELLUS L., À LA RESERVE DE GENK. [THE PRESERVATION OF THE LAPWING, VANELLUS VANELLUS L. AT THE RESERVE OF GHENT.] Gerfaut Rev. Belg. Ornithol. 53(1): 3-25, maps. 1963. [From Biol. Abstr. 46(16), 1965. In French with Flemish summ.] WR 121: 75
[Univ. Liege, Inst. Zool., Liege, Belgium.]

Snow, D. W. THE BREEDING OF AUDUBON'S SHEARWATER (PUFFINUS LHERMINIERE) IN THE GALAPAGOS. Auk 82(4): 591-597, 1 fig. Oct. 1965. WR 121: 75
[British Trust for Ornithol., Witherby House, Tring, Hertfordshire, England.] The Audubon's shearwater breeds throughout the year, but individual birds have a breeding cycle averaging about 9 months long.--From summ.

Verheijen, J. A. J. BREEDING SEASON ON THE ISLAND OF FLORES, INDONESIA. Ardea 52: 194-201. 1964. [From Ibis 107(3), 1965.] WR 121: 75
Extensive tabulated data of months of laying of over 100 spp.--From abstr.

REPTILES AND AMPHIBIANS

Banta, Benjamin Harrison. AN ANNOTATED CHRONOLOGICAL BIBLIOGRAPHY OF THE HERPETOLOGY OF THE STATE OF NEVADA. Wasmann J. Biol. 23(1&2): 1-224. Spring and Fall 1965. WR 121: 75
[Mich. State Univ., East Lansing.] With an author index, systematic index and two geographic indices.

Barwick, R. E., and C. Bryant. PHYSIOLOGICAL AND BIOCHEMICAL ASPECTS OF HIBERNATION IN THE SCINCID LIZARD EGERNIA CUNNINGHAMI (GRAY, 1832). Physiol. Zool. 39(1): 1-29, 6 figs. Jan. 1966. WR 121: 75
[Australian Natl. Univ., Canberra, Australia.]

Bragg, Arthur N. MASS MOVEMENTS RESULTING IN AGGREGATIONS OF TADPOLES OF THE PLAINS SPADEFOOT, SOME OF THEM IN RESPONSE TO LIGHT AND TEMPERATURE. (AMPHIBIA: SALIENTIA). Wasmann J. Biol. 22(2): 299-305, 2 figs. Fall 1964. WR 121: 75
[Univ. Okla., Norman.]

Burrage, Bryan R. NOTES ON THE EGGS AND YOUNG OF THE LIZARDS GERRHONOTUS MULTICARINATUS WEBBI AND G. M. NANUS. Copeia 1965(4): 512. 31 Dec. 1965. WR 121: 75
[San Diego State Coll., San Diego, Calif.]

Bustard, H. Robert. OBSERVATIONS ON AUSTRALIAN GECKOS. Herpetologica 21 (4): 294-302, 4 figs. 31 Dec. 1965. WR 121: 76
[Australian Natl. Univ., Canberra.]

Bustard, H. Robert. OBSERVATIONS ON THE LIFE HISTORY AND BEHAVIOR OF CHAMAELEO HOHNELII (STEINDACHNER). Copeia 1965(4): 401-410. 31 Dec. 1965. WR 121: 76
[Australian Natl. Univ., Canberra.]

Carpenter, Charles C. THE DISPLAY OF THE COCOS ISLAND ANOLE. Herpetologica 21(4): 256-260, 1 fig. 31 Dec. 1965. WR 121: 76
[Univ. Okla., Norman.]

Degenhardt, William G. A METHOD OF COUNTING SOME DIURNAL GROUND LIZARDS OF THE GENERA HOLBROOKIA AND CNEMIDOPHORUS WITH RESULTS FROM THE BIG BEND NATIONAL PARK. Am. Midland Nat. 75(1): 61-100, 8 figs. Jan. 1966. WR 121: 76
[Univ. N. Mex., Albuquerque.] A quadrat method was developed whereby all lizards are counted within a plot of known area for a specific number of days. These daily counts are averaged to arrive at an index number recorded as lizards per acre.

Douglas, Neil H. OBSERVATIONS ON THE PREDACEOUS AND CANNIBALISTIC FEEDING HABITS OF EUMECES LATICEPS SCHNEIDER. Herpetologica 21(4): 308-309. 31 Dec. 1965. WR 121: 76
[Northeast La. State Coll., Monroe.]

Evans, Kenneth Jack. EFFECTS OF CYCLIC LIGHT AND TEMPERATURE ON THE LOCOMOTOR ACTIVITY OF THE LIZARDS UTA STANSBURIANA AND COLEONYX VARIEGATUS. Ph.D. thesis, Univ. Calif. (Riverside). 92 p. 1964. [From Dissertation Abstr. 26(6), 1965.] WR 121: 76

Garanin, V. I. [INFORMATION ON THE DISTRIBUTION AND NUMBER OF AMPHIBIANS IN THE VOLGA-KAMA REGION.] In: (The natural resources of the Volga-Kama region. Animal world.) Nauka (Moscow). p. 127-133. 1964. [From Biol. Abstr. 46(16), 1965, from Referat. Zhur., Biol., 1964, no. 22I126. Transl. of Russian abstr.] WR 121: 76

Hansen, Keith L. BREEDING RECORDS OF THE EASTERN SPADEFOOT TOAD. Herpetologica 21(4): 303-305. 31 Dec. 1965. WR 121: 76
[Stetson Univ., De Land, Fla.] Supplements the author's earlier paper [WR 93: 80].

Heatwole, Harold, and Owen J. Sexton. HERPETOFAUNAL COMPARISONS BETWEEN TWO CLIMATIC ZONES IN PANAMA. Am. Midland Nat. 75(1): 45-60, 3 figs. Jan. 1966. WR 121: 76
[Univ. Puerto Rico, Rio Piedras.] Qualitative and quantitative studies were made on reptiles and amphibians in forests of two climatic zones in Panamá, designated as the "Seasonally Humid Zone" and the "Perhumid Zone."--From abstr.

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Indiana: Director, Div. Fish & Game, Dept. Conservation, 603 State Office Bldg., Indianapolis 46204.

Iowa: Director, State Conservation Commission, E. 7th & Court Ave., Des Moines 50309.

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Kentucky: Commissioner, Dept. Fish & Wildlife Resources, State Office Bldg. Annex, Frankfort 40601.

Louisiana: Commission Director & Secretary, Wild Life & Fisheries Commission, Wildlife & Fisheries Bldg., 400 Royal St., New Orleans 70130.

Maine: Commissioner, Dept. Inland Fisheries & Game, State House, Augusta 04330.

Dept. Sea & Shore Fisheries, State Office Bldg., Augusta 04330. (Marine)

Maryland: Director, Dept. Game & Inland Fish, State Office Bldg., P. O. Box 231, Annapolis 21404.

Dept. Tidewater Fisheries, State Office Bldg., Annapolis 21401. (Marine)

Massachusetts: Director, Div. Fisheries & Game, Dept. Natural Resources, 73 Tremont St., Boston 02108.

Michigan: Director, Dept. Conservation, Lansing 48926.

Minnesota: Commissioner, Dept. Conservation, 658 Cedar St., St. Paul 55101.

Mississippi: Executive Director, Game & Fish Commission, Woolfolk State Office Bldg., Jackson 39205.

Missouri: Director, State Conservation Commission, Farm Bureau Bldg., Jefferson City 65102.

Montana: Director, State Fish & Game Dept., Helena 59601.

Nebraska: Director, Game, Forestation & Parks Commission, State Capitol Bldg., Lincoln 68509.

Nevada: Director, Fish & Game Commission, Box 678, Reno.

New Hampshire: Director, Fish & Game Dept., 34 Bridge St., Concord 03301.

New Jersey: Director, Dept. Conservation & Economic Development, Div. Fish & Game, Labor & Industry Bldg., Box 1807, Trenton 08625.

New Mexico: Director, Dept. Game & Fish, State Capitol, Santa Fe 87501.

New York: Commissioner, Conservation Dept., Conservation Dept. Bldg., State Office Bldgs. Campus, Albany 12225.

North Carolina: Executive Director, Wildlife Resources Commission, Box 2919, Raleigh 27602.

North Dakota: Commissioner, State Game & Fish Dept., Bismarck 58501.

Ohio: Director, Dept. Natural Resources, 1106 Ohio Departments Bldg., Columbus 43215.

Oklahoma: Director, Dept. Wildlife Conservation, P. O. Box 53098, Oklahoma City 73105.

Oregon: Director, State Game Commission, P. O. Box 3503, Portland 97208.

Oregon Fish Commission, 307 State Office Bldg., Portland 97201. (Commercial)

Pennsylvania: Executive Director, Game Commission, P. O. Box 1567, Harrisburg 17120.

Executive Director, Fish Commission, State Capitol, Harrisburg 17120.

Rhode Island: Chief, Div. Fish & Game, Dept. Agriculture & Conservation, Veterans Memorial Bldg., 83 Park St., Providence 02903.

South Carolina: Director, Wildlife Resources Dept., Box 360, Columbia 29209.

South Dakota: Director, Dept. Game, Fish & Parks, State Office Bldg., Pierre 57501.

Tennessee: Director, Tenn. Game & Fish Commission, Cordell Hull Bldg., Nashville 37219.

Texas: Director, Dept. Parks & Wildlife, Austin 78701.

Utah: Director, State Dept. Fish & Game, 1596 W. North Temple, Salt Lake City 84114.

Vermont: Fish & Game Commissioner, Fish & Game Board, Montpelier 05602.

Virginia: Executive Director, Commission Game & Inland Fisheries, 7 N. 2nd St., P. O. Box 1642, Richmond 23213.

Commissioner, Commission of Fisheries, Newport News.

Washington: Director, Dept. Game, 600 N. Capitol Way, Olympia 98502.

Director, Dept. Fisheries, Room 115, General Administration Bldg., Olympia 98502.

West Virginia: Director, Dept. Natural Resources, State Office Bldg., #3, Charleston 25305.

Wisconsin: Director, Conservation Dept., State Office Bldg., Box 450, Madison 53701.

Wyoming: Director, Game & Fish Commission, Box 378, Cheyenne 82001.

Puerto Rico: Dept. Agriculture, Chief Div. Fisheries & Wildlife, Box 10163, Santurce, San Juan 00908.

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